



Islands Trust

Preserving Island communities, culture and environment

**A NOTICE OF A BUSINESS MEETING OF
THE ISLANDS TRUST EXECUTIVE COMMITTEE ACTING AS A LOCAL TRUST COMMITTEE**
to be held Monday, February 24, 2014 at 10:00 am
Islands Trust Office, 700 North Road, Gabriola Island, BC

AGENDA

		Page No.	*Approx. Time*
1.	CALL TO ORDER		
2.	APPROVAL OF AGENDA		
3.	MINUTES		
3.1	Local Trust Committee Draft Special Meeting Minutes of January 16, 2014 – <i>attached for adoption</i>	1	
3.2	Section 26 Resolutions Without Meeting Log dated February 13, 2014- <i>attached</i>	9	
4.	BUSINESS ARISING FROM MINUTES		10:50 am
4.1	Follow-up Action List dated February 13, 2014 – <i>attached for information</i>	10	
4.2	Eelgrass Mapping for the Ballenas-Winchelsea Islands Area		
	4.2.1 Islands Trust Fund Briefing – Memorandum dated February 12, 2014 - <i>attached</i>	12	
	4.2.2 Final Report – Nearshore Eelgrass Inventory 2012-2013 - <i>attached</i>	15	
	4.2.3 Ballenas-Winchelsea Islands Eelgrass Mapping	73	
5.	CORRESPONDENCE - none		
6.	REPORTS		11:00 am
6.1	Work Program		
	6.1.1 Top Priorities Report and Projects List dated February 13, 2014 – <i>attached</i>	74	
6.2	Trustee and Local Expenses		
	6.2.1 Expenses posted to month ending October, 2013 - <i>attached</i>	76	
	6.2.2 Expenses posted to month ending November, 2013 - <i>attached</i>	77	
	6.2.3 Expenses posted to month ending December, 2013 - <i>attached</i>	78	
	6.2.4 Expenses posted to month ending January 14, 2014 - <i>attached</i>	79	
7.	LOCAL TRUST COMMITTEE PROJECTS		11:10 am
7.1	Ballenas-Winchelsea Islands Proposed Official Community Plan Bylaw No. 27 and Proposed Land Use Bylaw No. 28		
	7.1.1 Staff Report dated February 4, 2014 - <i>attached</i>	80	
	7.1.2 Submission from Ballinac Holding Ltd. - <i>attached</i>	84	

- 8. BYLAWS**
- 8.1 Proposed Bylaw No. 27 may be cited for all purposes as the “Ballenas-Winchelsea Islands Official Community Plan Bylaw, 2013” - *for consideration of second reading* 96
- 8.2 Proposed Bylaw No. 28 may be cited for all purposes as the “Ballenas-Winchelsea Islands Land Use Bylaw No. 28, 2013.” - *for consideration of second reading* 134
- 9. TOWN HALL SESSION**
- 10. NEW BUSINESS**
- 11. ISLANDS TRUST WEBSITE**
- 11.1 Ballenas-Winchelsea Islands Pages – *for discussion*
Executive (Ballenas-Winchelsea) Local Trust Committee Website can be found at:
<http://www.islandstrust.bc.ca/islands/local-trust-areas/ballenas-winchelsea.aspx>
- 12. NEXT MEETING DATE**
Friday, May 2, 2014 at 10:00 am at Islands Trust Board Room, 700 North Road, Gabriola Island, BC
- 13. ADJOURNMENT** 12:30 pm

*Approximate time is provided for the convenience of the public only and is subject to change without notice.

DRAFT

**Islands Trust Executive Committee
Acting as a Local Trust Committee
Minutes of a Special Business Meeting**

Date of Meeting: Thursday, January 16, 2013
Location: Nanoose Library Hall
 2489 Nanoose Road, Nanoose, BC

Members Present: Sheila Malcolmson, Chair
 David Graham, Local Trustee
 Peter Luckham, Local Trustee
 Ken Hancock, Local Trustee

Staff Present: Courtney Simpson, Regional Planning Manager
 Marnie Eggen, Planner
 Jessie Sherk, Recorder

Media and Others Present: 2 members of the public were in attendance

1. CALL TO ORDER

Chair Malcolmson called the meeting to order at 5:30pm. She acknowledged that the meeting was being held in the traditional territory of the Coast Salish First Nations. Staff and trustees were introduced.

2. APPROVAL OF AGENDA

The agenda was approved by consensus as presented.

3. MINUTES

3.1 Local Trust Committee Draft Meeting Minutes of October 9, 2013 – for adoption

The minutes were adopted by consensus.

3.2 Local Trust Committee Draft Special Meeting Minutes of November 21, 2013 – for adoption

The minutes were deferred to allow the staff to take another look and will consider adoption with Resolution Without Meeting.

3.3 Local Trust Committee Public Hearing Record of November 21, 2013

Amend Public Hearing Record to include that Ken Hancock had expressed his regrets.

Received as amended.

3.4 Section 26 Resolutions Without Meeting – none

4. PROPOSED OFFICIAL COMMUNITY PLAN BYLAW NO. 27 AND PROPOSED LAND USE BYLAW NO. 28 – NEXT STEPS

4.1 Staff report dated December 20, 2013

Planner Eggen introduced the report and explained that Planner Zupanec was unable to attend the meeting. She read through the possible revisions to Proposed Bylaw No. 27 and noted that public input indicated that they would like to permit bed and breakfast/guest rentals, as well as reduce the maximum floor space of dwellings. Also noted was that a second Public Hearing would be required should the Local Trust Committee endorse these revisions. Some points that Planner Eggen discussed that were not a part of the staff report included:

- A request for amending the proposed Land Use Bylaw in the information note at section 3.1 to specify that these are provincial regulations;
- Advice on an alternative definition of short term vacation rental/accommodation;
- There is a small typo to the conservation zoning, the word “vacation” in “short term vacation accommodation” should be deleted; and
- The request to add an information note regarding archaeological sites to the end of section 3.10.

Planner Eggen then discussed the next steps stating that staff recommends provisions to the proposed Bylaw No. 28 that alter the use of land post-Public Hearing. She then went through the process timeline.

Discussion ensued amongst staff and trustees about the definition of short-term vacation rental and the inclusion of a person's activities elsewhere. Also discussed was the eliminated definition for short-term vacation rental.

EXLTC-2014-001

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee request that staff propose an alternative definition for short term vacation rental/accommodation by using a definition that relies solely on use and not the user.

CARRIED

The table of recommended revisions was reviewed.

EXLTC-2014-002

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee give third reading to proposed Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013 as revised and forward it to the Executive Committee for consideration of approval.

CARRIED

EXLTC -2014-003

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee forward Proposed Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013 to the Minister of Community Sport and Cultural Development for approval.

CARRIED

EXLTC-2014-004

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee rescind second reading of proposed Bylaw No. 28 cited as Ballenas-Winchelsea Islands Land Use Bylaw 2013.

CARRIED

It was noted that another Public Hearing has automatically been triggered which makes it possible for the Local Trust Committee to accept additional input and telephone calls on the matter. Chair Malcolmson then invited the public to make suggestions or ask any questions they may have.

Lyle Montgomery, who represents the property owner on North Ballenas Island, stated that he has made repeated calls to the planner with no response. He has an issue with the change of 10 acre subdividable to 49.9 acre subdividable. He stated that the change has taken away any possibilities for his client to sell any portions of his property. Planner Eggen explained the prior decision by the LTC to revise the Official Community Plan to permit subdivision on Ballenas Island via rezoning only with the idea that they would be allowed one dwelling per 10 acres instead.

Mr. Montgomery stated that his intent is to try and slow the process down and that this subdivision change is a major economic hit to the property owner. Chair Malcolmson reminded Mr. Montgomery that since that process has opened up again, he can write a letter that can get on to a future meeting agenda.

Mr. Montgomery noted that the property owner does not understand the process. Trustee Luckham noted that for the property owner's clarity, the ability to rezone the property to change the subdividable opportunities there still exists through application, and if the owner wants to come to the committee with that, it would be a consideration.

Suzy Miller wondered if the language changed to protect the Winchelsea Island situation that already exists and if any of it applies to Mistaken Island. Chair Malcolmson stated that the wording that is being proposed is just to make sure it's not open to interpretation down the road.

Mr. Montgomery stated that he could appreciate that the rezoning capability is always there. This board may be favorable to rezoning but another board down the road may not be. He reiterated his desire to have the process slow down and think this through further.

It was suggested that if a property owner wants to impact the Land Use Bylaw side of things, the best thing might be to talk to the planner and develop a letter to be a submission for the Public Hearing.

Planning Manager Simpson noted that if new information is being encouraged, then the Official Community Plan should be included in the Public Hearing as well.

Discussion ensued amongst the committee members regarding the subdivision regulations in the Official Community Plan and how it affects the Land Use Bylaw, densities and the possibility of strata.

The committee members and Mr. Montgomery discussed further, the specific needs of the property owner on North Ballenas Island. Mr. Montgomery again expressed his desire to slow this process down. Chair Malcolmson noted that they have been sending letters to the property owner since 2011, so the process has already been slowed down.

EXLTC-2014-005

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee request that staff bring back the late Archeological Management Branch information note for insertion at time of final Official Community Plan adoption.

CARRIED

EXLTC-2014-006

It was MOVED and SECONDED

that the Executive Committee acting as a Local Trust Committee revise Bylaw No. 28 by deleting the word "vacation" from section 5.3 subsection (1) (b) and 5.3 subsection (2).

CARRIED

EXLTC-2014-007

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee give second reading to proposed Bylaw No. 28 cited as the Ballenas-Winchelsea Islands Land Use Bylaw 2013 as revised.

CARRIED

EXLTC-2014-008

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee consider the consultation for the Ballenas-Winchelsea Official Community Plan and Land Use Bylaw project pursuant to s. 879 of the *Local Government Act* to be sufficient and that staff be requested to schedule a second Public Hearing, publish notification in the appropriate newspaper, and notify property owners within the plan area by mail-out including the attached letter.

CARRIED

Planning Manager Simpson noted the possibility that there may be a slight flaw in the process. Her concern was regarding the fact that the information they heard today from a member of the public was, in fact, new information, which would trigger the need for the next Public Hearing to include the Official Community Plan as well. Discussion ensued amongst staff and trustees.

By general consent the meeting was recessed at 7:05pm and reconvened at 7:10pm.

After a considerable amount of discussion and looking back through the Public Hearing Record of November 21, 2013, it was agreed that they had indeed heard new information today. It was also agreed that there is no significant problem with including the Official Community Plan in the next Public Hearing.

Chair Malcolmson noted that they could now receive input on both the Official Community Plan and the Land Use Bylaw. Discussion ensued regarding the next steps and the order of procedure pertaining to third reading. Also discussed was that the door could be potentially opened for a third Public Hearing. It was noted that a Public Hearing has to be complete prior to third reading.

EXLTC-2014-009

It was Moved and SECONDED,

that the Executive Committee acting as a Local Trust Committee rescind third reading of proposed Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013 as revised.

CARRIED

EXLTC-2014-010

It was MOVED and SECONDED,

that the Executive Committee acting as Local Trust Committee rescind the motion to forward Proposed Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013 to the Minister of Community Sport and Cultural Development for approval.

CARRIED

EXLTC-2014-011

It was Moved and Seconded,

that the Executive Committee acting as a Local Trust Committee amend the Ballenas-Winchelsea Islands Official Community Plan Bylaw No. 27 by adding to the end of Section 3.10:

Information Note: Archaeological sites (both known and unknown) are protected under the *Heritage Conservation Act* and must not be altered without a permit from the Archaeology Branch. Given the islands have significant potential to contain unknown archaeological sites, the Archaeology Branch recommends that a qualified (able to hold heritage inspection permits through the Archaeology Branch) consulting archaeologist should be engaged prior to any land-altering activities to determine if development activities are likely to impact any archaeological sites.

CARRIED

It was noted by staff that the committee should not have added the information note before rescinding second reading. Discussion ensued.

EXLTC-2014-012

It was MOVED and SECONDED,

That the Executive Committee acting as a Local Trust Committee rescind the resolution to add an information note to the end of Section 3.10.

CARRIED

EXLTC-2014-013

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee rescind second reading of proposed Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013.

CARRIED

EXLTC-2014-014

It was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee amend the Ballenas-Winchelsea Islands Official Community Plan Bylaw No. 27 by adding to the end of Section 3.10:

Information Note: Archaeological sites (both known and unknown) are protected under the *Heritage Conservation Act* and must not be altered without a permit from the Archaeology Branch. Given the islands have significant potential to contain unknown archaeological sites, the Archaeology Branch recommends that a qualified (able to hold heritage inspection permits through the Archaeology Branch) consulting archaeologist should be engaged prior to any land-altering activities to determine if development activities are likely to impact any archaeological sites.

CARRIED

EXLTC-2014-015

It was MOVED and SECONDED,

That the Executive Committee acting as a Local Trust Committee give second reading to Bylaw No. 27 cited as the Ballenas-Winchelsea Islands Official Community Plan Bylaw No. 2013 as revised.

CARRIED

It was noted that both the Official Community Plan and Land Use Bylaw would be going to second Public Hearing.

5. BYLAWS

- 5.1 Proposed Official Community Plan Bylaw No. 27 cited as the “Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013” – for consideration of third reading and submission to Executive committee and to the Minister of Community, Sport and Cultural Development for approval**

Bylaw was not given further reading.

- 5.2 Proposed Land Use Bylaw No. 28 cited as the “Ballenas-Winchelsea Islands Land Use Bylaw No. 28, 2013 – for consideration of second reading as revised.**

Bylaw was not given further reading.

6. NEXT MEETING DATE

Monday, February 24, 2014 at 10am at the Islands Trust Northern Office Board Room, 700 North Road, Gabriola Island, BC.

It was noted that this meeting might be rescheduled.

7. ADJOURNMENT

By general consent the meeting adjourned at 7:30pm.

Sheila Malcolmson, Chair

CERTIFIED CORRECT:

Jessie Sherk, Recorder



RWM From: January 01, 2013 To: February 13, 2014

Executive Committee

Resolution #	Action	Resolution Description	Resolution Date
2013-02	In Favour	THAT the Executive Committee Acting As A Local Trust Committee schedule a Special Local Trust Committee Meeting on Thursday January 16, 2014 at the Nanoose Library and Hall at 5:30 pm for the purpose of reviewing next steps for Proposed Bylaws 27 and 28."	Dec 05, 2013
2013-01	Opposed	THAT the Executive Committee Acting as a Local Trust Committee approve and forward the draft 2014-145 LTC Project Budget submission to Financial Planning Committee as in the August 1, 2013 Memorandum from C. Simpson, Regional Planning Manager, Islands Trust, attached.	Sep 16, 2013



Islands Trust

Follow Up Action Report w/ Target Date

"Executive Area" Islands Feb-07-2012

No.	Activity	Responsibility	Target Date	Status
1	Upon completion of OCP and LUB, follow-up on the issue of an agreement with the Crown under section 9 and 29(4) of the Islands Trust Act to Trust Council for consideration.	Sonja Zupanec	May-17-2012	On Going

Oct-09-2013

No.	Activity	Responsibility	Target Date	Status
1	Explore ways in which the Local Trust Committee could work with the Nanoose First Nations.	Sonja Zupanec		On Going
1	Request the following for the 2014-15 Budget Submissions: - that \$1,000 be allocated to Local Trust Committee meeting expenses; - the program budget submission be revised to reflect Resolution EXLTC-030-2013 by including \$2,000.00 for First Nations liaison. (in addition to the \$2000.00/year automatically allocated for special projects)	Courtney Simpson	Oct-11-2013	Done
1	Advise on minor amendments to OCP and LUB prior to consideration of 3rd reading: - LUB & OCP (1.2, 3.1 or 3.10): info note in LUB and OCP to caution landowners that there are recorded archaeological sites and a high potential for unrecorded sites; - LUB: specify in 3.1 info note that statutory references are provincial regulations; - LUB: alternative definition of short term vacation/rental that relies on 'use.'	Marnie Eggen Sonja Zupanec	Oct-31-2013	On Going

1	Forward the following resolution regarding the 2014-15 Strategic Plan to the CAO: that the Executive Committee Acting as a Local Trust Committee request that its First Nations liaison initiative for 2014-15 be reflected in the strategic plan.	Marnie Eggen	Nov-29-2013	Done
1	Advise EC that when there is an opportunity to request legislative change of the <i>Islands Trust Act</i> , that the name for the Executive Islands be changed to Ballenas – Winchelsea Islands Local Trust Area and Local Trust Committee.	Sonja Zupanec	Dec-03-2013	Done
1	To make necessary arrangements to ensure consistent legal and operational references to the LTC and LTA are used Trust wide, as per October 9th resolutions.	Marnie Eggen Sonja Zupanec	Jan-31-2014	On Going



Memorandum

200 1627 Fort Street, BC V8R 1H8

Telephone 250. 405.5186 FAX: 250. 405.5151

Toll Free via Enquiry BC in Vancouver 604-660-2421.

Elsewhere in BC 1.800.663.7867

itfmail@islandstrust.bc.ca

www.islandstrust.bc.ca

www.islandstrustfund.bc.ca

Date: February 12, 2014

To: Ballenas-Winchelsea (Executive Islands) Local Trust Committee

From: Kate Emmings, Ecosystem Protection Specialist, Islands Trust Fund

Re: Islands Trust/Islands Trust Fund Eelgrass Mapping

Eelgrass Mapping in the Ballena-Winchelsea (Executive Islands) Local Trust Area

Eelgrass mapping for the Ballenas-Winchelsea Local Trust Area was completed in 2013 by SeaChange Marine Conservation Society under contract with the Islands Trust (see attached report). There was very little eelgrass found in the area, mostly due to the rocky nature of the shorelines. Approximately 1.4% of the linear shoreline of the local trust area had eelgrass coverage.

Eelgrass beds were found around Mistaken Island, North and South Ballenas Island, the Ada Islands and Southey Island. No eelgrass habitats were observed on Gerald, Yeo, Amelia, Ruth or Winchelsea Islands.

About Eelgrass

Eelgrass is a critical nearshore habitat for birds, mammals, invertebrates and commercial and non commercial fish. Eelgrass beds are also an important carbon sink. Contaminants, shading from docks and overwater structures, increased sedimentation, marine traffic and development pressures from shoreline land use threaten eelgrass ecosystems and the species they support.

Report Recommendations

Most of the Ballenas-Winchelsea local trust area shoreline remains naturalized; however, there are some areas where boat use, docks and shoreline modifications may begin to affect eelgrass habitats. The 2012-2013 Nearshore Eelgrass Inventory Report contains several recommendations. Some of the relevant recommendations for local trust committees are:

- Create setbacks from the shoreline in regulatory bylaws.
- Prevent construction of docks in eelgrass beds. Where dock construction cannot be avoided, ensure that docks are built to allow light to pass through to eelgrass beds below and that they are constructed from materials that have a minimum impact on water quality.
- Require removal of illegal shoreline modifications and habitat restoration where appropriate.
- Support education of the boating community and shoreline landowners regarding the importance of eelgrass beds and natural shorelines.
- Encourage the boating community not to locate mooring buoys in eelgrass beds and not to anchor in eelgrass beds. Where mooring buoys are located in eelgrass beds, encourage the use of line floats to

keep chains and lines off of the sea floor where they can drag and scour the bottom, removing eelgrass habitat and killing species.

- Encourage dock owners to replace dock materials with light penetrable materials.

Next Steps

The Islands Trust Fund has placed the eelgrass mapping and the associated report on its website at www.islandstrustfund.bc.ca and eelgrass mapping has been added to the MapIT public mapping site at <http://mapit.islandstrust.bc.ca> (links on Islands Trust and Islands Trust Fund websites). Local trust committees are encouraged to provide links to the mapping on their websites and consider actions within their local trust areas to include eelgrass protection in their official community plans and regulatory bylaws as per the Islands Trust Policy Statement, section 3.4.4 (see background below).

Attachment Report: 2012-2013 Nearshore Eelgrass Inventory
Map 8. Eelgrass Presence, Ballenas-Winchelsea (Executive Islands) Local Trust Area

Background

The Islands Trust Policy Statement, section 3.4.4, states:

Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address the protection of sensitive coastal areas.

The 2013 Audit of Biodiversity in B.C. (Office of the Auditor General of B.C., www.bcauditor.com/pubs/2013/report10/audit-biodiversity-bc-assessing-effectiveness-key-tools) highlighted the importance of collecting sufficient and reliable information on species distribution in order to make well-informed decisions about conserving biodiversity. With sensitive ecosystem mapping completed in the Islands Trust Area (2008-2010), the Bowen Island Municipality (BIM) and local trust committees have access to ecosystem data for terrestrial species. The Islands Trust and Islands Trust Fund are now working to acquire mapping of sensitive coastal areas to help island governments meet the requirements of the Islands Trust Policy Statement.

In 2012, the Islands Trust and Islands Trust Fund launched a project to map eelgrass as a partnership with the Seagrass Conservation Working Group and SeaChange Marine Conservation Society. The arrangement between the partners results in shared funding of the program between the Islands Trust, the Trust Fund Board and the Seagrass Conservation Working Group (through its member group, SeaChange Marine Conservation Society).

Eelgrass mapping is intended to assist BIM, local trust committees and the Trust Fund Board in making science-based decisions about land use and conservation to preserve coastal ecosystems in the Islands Trust Area. Eelgrass mapping will serve as a baseline inventory to monitor the effects of conservation activities, such as Marine Protected Areas, as well as human impacts, such as potential increased tanker traffic, marine industrial activities (e.g. log dumping and booms) and foreshore use (e.g. wharves and docks). It will also enable marine conservation groups to identify areas ideal for eelgrass restoration.

In 2012, the Islands Trust Fund and Seagrass Conservation Working Group, with financial assistance from some local trust committees and outside funders, mapped eelgrass in the following areas:

- Gambier;
- Lasqueti;
- Mayne;
- North and South Pender; and
- Thetis and associated islands (except Valdes).

In 2013, the partnership mapped eelgrass in the following areas, with funding from the Islands Trust, Islands Trust Fund, Metro Vancouver, Comox Valley Regional District, Capital Regional District, Victoria Foundation, Greater Victoria Savings and Credit Union Legacy Foundation and the Pacific Salmon Foundation:

- Bowen Island Municipality;
- The Ballenas-Winchelsea Local Trust Area;
- Denman Island;
- Gabriola and associated islands;
- Galiano and associated islands;
- Gambier associated islands;
- Hornby Island; and
- Valdes Island.

Resources for local trust committees

The following are some resources for local trust committees. Please see references in the attached report for a more complete list.

Hutton, K. E. and S. C. Samis. 2000. Guidelines to protect fish and fish habitat from treated wood used in aquatic environments in the Pacific Region. Can. Tech. Rep. Fish. Aquat. Sci. 2314: vi + 34 p. Available at <http://www.dfo-mpo.gc.ca/Library/245973.pdf> .

Fisheries and Oceans Canada. Projects Near Water. Available at <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html> .

Province of BC. 2011 (amended August 2013). Land Use Operational Policy: Private Moorage. Available at [http://www.for.gov.bc.ca/Land Tenures/documents/policies/private moorage.pdf](http://www.for.gov.bc.ca/Land_Tenures/documents/policies/private_moorage.pdf) .

EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Program. October 2007 (revised June 2010). Protecting Nearshore Habitats and Functions in Puget Sound. Available at <http://wdfw.wa.gov/publications/00047/>.

2012 - 2013

Final Report Nearshore Eelgrass Inventory



**Prepared for the Islands Trust and
Islands Trust Fund by:**

Nikki Wright, BA Executive Director
SeaChange Marine Conservation Society

Leanna Boyer, BSc. MA
Mayne Island Conservancy Society

Keith Erickson, R.P. Bio. Conservation
Coordinator

15 Galiano Conservancy Association

Table of Contents

1.0	Introduction	3
2.0	Importance of Eelgrass	4
2.1	Biodiversity	4
2.2	Blue Carbon	4
2.3	Ecosystem Services	5
3.0	Eelgrass Habitat Characteristics	5
3.1	Wildlife Corridors	6
4.0	Impacts from Human Activities	6
4.1	Removal and Burial	7
4.2	Pollution and Changes to Freshwater Input	7
4.3	Forestry Practices	8
4.4	Oil Spills	8
4.5	Shading by Overwater Structures	8
4.6	Effects of Boating	8
5.0	Eelgrass and Rising Sea Levels	9
6.0	Mapping Methodology	9
6.1	Distribution	10
6.2	Form	10
6.3	Sediment Types	10
6.4	Percent of Cover	11
6.5	Tidal Fluctuations	11
6.6	Presence of Other Vegetation	11
6.7	Visibility	11
7.0	Survey Limitations	12
8.0	2012 Inventory Findings	12
8.1	Gambier Island Local Trust Area	12
8.2	Lasqueti Island	15
8.3	North Pender Island	15
8.4	South Pender Island	16
8.5	Mayne Island	16
8.6	Thetis Island Local Trust Area	16
9.0	2013 Inventory Findings	19
9.1	Galiano Island Local Trust Area	20
9.2	Gabriola Island Local Trust Area	21
9.3	Denman Island Local Trust Area	23
9.4	Hornby Island Local Trust Area	23
9.5	Ballenas – Winchelsea (Executive Islands)	
	Local Trust Area	23
9.6	Bowen Island Municipality	24
10.0	Threats to Eelgrass Habitats	26
11.0	Opportunities for Eelgrass Restoration	26
11.1	History of Eelgrass Restoration	27

11.2	Criteria for Successful Restoration	27
12.0	Recommendations	27
12.1	Education	28
12.2	Regulatory and Enforcement	28
12.3	Opportunities to collaborate with other agencies	29
13.0	Conclusion	29
	References	30

Eelgrass Maps

- Map 1. Eelgrass Presence North Pender Island
- Map 2. Eelgrass Presence South Pender Island
- Map 3a. Eelgrass Presence Gambier Island Local Trust Area
- Map 3b. Eelgrass Presence Gambier Local Trust Area Associated Islands
- Map 4a. Eelgrass Presence Thetis Island Local Trust Area Excluding Valdes
- Map 4b. Eelgrass Presence Valdes Island
- Map 5a. Eelgrass Presence Lasqueti Island – East
- Map 5b. Eelgrass Presence Lasqueti Island – West
- Map 6. Eelgrass Presence Hornby Island Local Trust Area
- Map 7. Eelgrass Presence Mayne Island
- Map 8. Eelgrass Presence Ballenas – Winchelsea (Executive Islands) Local Trust Area
- Map 9a. Eelgrass Presence Bowen Island North and Bowyer Island
- Map 9b. Eelgrass Presence Bowen Island South and Passage Island
- Map 10. Eelgrass Presence Denman Island Local Trust Area
- Map 11a. Eelgrass Presence Gabriola Island Local Trust Area – Southeast
- Map 11b. Eelgrass Presence Gabriola Island Local Trust Area – Northwest
- Map 12a. Eelgrass Presence Galiano Island Local Trust Area – South
- Map 12b. Eelgrass Presence Galiano Island Local Trust Area – North

Appendix A	Mapping Methodology
Appendix B	Maps of Shoreline Units
Appendix C	Summary of Overwater Structures

SeaChange Marine Conservation Society acknowledges the Mayne Island Conservancy Society for the use of its software and computer for data management. Seachange would also like to acknowledge funding from the following sources, which has made this project possible: Islands Trust, Islands Trust Fund, the Capital Regional District, the Comox Valley Regional District, Metro Vancouver, the Greater Victoria Savings and Credit Union Legacy Foundation, Vancouver City Savings (Vancity), the Public Conservation Assistance Fund, Moonstone Enterprise, the Pacific Salmon Foundation and the Victoria Foundation.

Thank you.

1.0 Introduction

Land use developments within watersheds have led to a loss of natural estuarine and nearshore marine habitats in British Columbia - the receiving waters of land based activities. Agriculture, forestry, and dredging for commercial and residential development have all contributed to the loss (Durance, 2002). The pressure to modify natural marine features and habitat for the development of commercial facilities and residential units within coastal areas is intensifying. To prepare for the increase in populations on the BC coast and concurrent shoreline developments, it is necessary to identify and quantify nearshore habitats to protect and maintain these valuable nearshore environments.

This final report of the 2012 - 2013 nearshore inventory of native eelgrass, *Zostera marina* in selected islands is a summary of the rationale, methodology and findings conducted for the Islands Trust and Islands Trust Fund. The areas mapped during the summer and fall months of 2012 for eelgrass habitats were the Thetis Island Local Trust Area (excluding Valdes and the Cufra Inlet), Lasqueti Island, Gambier Island, North and South Pender Islands and Mayne Island.

The islands mapped in 2013 include the Bowen Island Municipality, Valdes Island and Cufra Inlet within the Thetis Island Local Trust Area, the Gambier Island Local Trust Area Associated Islands (excluding the islands off of the Sunshine Coast) and the local trust areas of: Denman, Hornby, Ballenas – Winchelsea (Executive Islands), Gabriola and Galiano.

The report serves also as background information for future eelgrass inventories and adds value to the Islands Trust Shoreline Mapping Project. The goal is to support sound decisions that will affect the natural ecological health of the marine nearshores within the Islands Trust Area. The Islands Trust and Islands Trust Fund have limited jurisdiction over marine areas; however, they can have an impact on long term development and protection of the shoreline. This report and the mapping information that forms its basis are designed to assist Islands Trust and Islands Trust Fund planners to make science-based decisions when planning for nearshore areas.

ShoreZone maps of coastal habitats within the Islands Trust Area were created over the past decade. ShoreZone is a mapping and classification system that produces an inventory of geomorphic and biological features of the intertidal and nearshore zones from low altitude aerial images of the coastal environment (Harper 2011). These maps provided the groundwork for identifying suitable physical components for eelgrass on the islands mapped during 2012-2013. The presence/absence of *Zostera marina* was determined according to the methodology of Cynthia Durance, R.P. Bio., Precision Identification (Appendix A). A more detailed description of the methods used can be found in Section 6.

2.0 Importance of Eelgrass

Seagrasses are rooted aquatic plants that grow in estuaries and along low wave energy shorelines throughout the world. They have important influences on biogeochemical cycling, sediment stability, and food web support (McGlathery et al. 2007; Orth et al., 2006). Seagrasses can form extensive meadows supporting high biodiversity. The global species diversity of seagrasses is low (~60 species). Across the globe, however, seagrass meadows cover about 177,000 square kilometers of coastal waters – larger than the combined area of the Maritime Provinces (Short et al, 2007). British Columbia has about 400 km² of saltmarsh and eelgrass habitats (Campbell 2010).

2.1 Biodiversity

The complex and intricate food webs of an eelgrass (*Zostera marina*) meadow provide food and shelter for numerous fish and invertebrates. Meadows also serve as a nursery habitat and as a refuge from predation for juvenile fishes (Orth et al., 1984; Bostrom and Bonsdorff 2000; Duarte 2000). The productivity of native seagrasses rivals the world's richest farmlands and tropical rainforests. From an unstructured muddy/sandy bottom grows a myriad pattern of leaves that supply nutrients to salmonids and other fish, shellfish, waterfowl and about 124 species of faunal invertebrates. The plants offer surface area for over 350 species of macroalgae and 91 species of epiphytic microalgae – the basis of the food web for juvenile salmon in marine waters (Phillips 1994). Often referred to as “salmon highways”, nearshore marine environments containing eelgrass beds (*Zostera marina*) are home to over 80% of commercially important fish and shellfish species, including all species of salmon, at some point in their life histories (Durance 2002).

2.2 Blue Carbon

Like terrestrial forests, eelgrass habitats capture and store large amounts of carbon but at much more efficient rates - up to ninety times the uptake provided by equivalent areas of forest. This “Blue Carbon” is stored in sediments where it is stable for thousands of years. In B.C., roughly 400 km² of salt marsh and seagrass meadows sequester as much carbon as B.C.'s portion of the boreal forest, and the equivalent of the emissions of some 200,000 passenger cars (Campbell 2010).

When eelgrass beds are restored, the rate of carbon sequestration appears to be rapid over the first few years and up to 40 years following restoration. The natural transport of eelgrass by currents and wave action to deeper waters in estuaries and the coastal ocean may further sequester more carbon (Thom 2011).

As ocean waters warm as a result of climate change (up to 5 C° during the spring), greater flowering as well as faster growth of eelgrass shoots has been observed. Both of these changes result in greater biomass. Like marshes, much of the eelgrass biomass is under the substrate, indicating that a warming environment may result in greater carbon accumulation rates (Thom 2011).

2.3 Ecosystem Services

Ecosystem services are the benefits provided by the land, air, water and subsurface materials of the earth (Molnar et al 2012). Eelgrass habitats within the lower reaches of the Salish Sea provide carbon sequestration and storage, habitat refugia and nursery and nutrient cycling benefits to an approximated natural capital cost of \$80,929 per hectare per year (Molnar et al., 2012). Within the Islands Trust Area, eelgrass habitats also provide revenue for commercial fisheries, recreational fishery, and revenue from tourism.

Protecting and conserving, and in some instances restoring these critical habitats is a recommendation of the Islands Trust Fund's Regional Conservation Plan. Mapping eelgrass is identified as a priority to meet the goal of conserving marine ecosystems and habitats. As well, accounting for these benefits in economic dollars and cents and factoring them into decision making policies would emphasize the economic, cultural and ecological values of nearshore habitats.

3.0 Eelgrass Habitat Characteristics

Eelgrass meadows are found in most of the world's coastal temperate regions except at extremely high latitudes. Physical and chemical factors affecting *Zostera marina* include temperature, light attenuation, elevation, substratum, wave action, salinity and pH. Worldwide, the plants survive under a wide range of water temperatures, from 0° to greater than 30°C. The optimum temperature for growth lies between 10° - 20° C in most areas (Phillips 1984). Eelgrass grows best within the Salish Sea in salinity ranges of 20 ppt - 32 ppt. Eelgrass can tolerate periods of freshwater inundation on a seasonal or daily basis (Durance 2002).

Of all the above factors, light availability and elevation may be the most crucial. Light availability seems to be the primary factor limiting depth distribution, density, and productivity of eelgrass meadows within their salinity and temperature ranges. When the Coal Port was expanded in 1982-1983 in Roberts Bank, both species of eelgrass (*Z. japonica* and *Z. marina*) expanded. The construction of causeways across a broad intertidal zone directed the turbid Fraser River water offshore, improving the light regime and initiating higher productivity in the eelgrass beds (Harrison and Dunn 1999).

3.1 Wildlife Corridors

Seagrasses are in decline throughout much of the world, with rates of loss accelerating from a median of 0.9% per year before 1940 to 7% per year since 1990 (Waycott et al., 2009). It has been estimated that 18% of coastal marine and nearshore wildlife habitat in the Salish Sea has been destroyed (British Columbia/Washington Marine Science Panel 1994). A large percentage of this decline is attributed to human impacts, including filling of shallow waters, dredging, and eutrophication (Short and Wyllie-Echeverria 1996).

Often referred to as “salmon highways”, nearshore marine environments containing *Z. marina* beds are home to more than 80% of commercially important fish and shellfish species, including all species of salmon, at some point in their life histories (Durance 2002). *Zostera marina* beds are highways for Chinook, Coho, Pink, Chum, and Sockeye salmonid stocks (Thompson 1994). Great Blue Herons have been observed to feed in eelgrass beds within 3 km of their nesting colonies. Other important bird species using these habitats include Brant geese, Rhinoceros Auklets, cormorants and Western Grebes.

E.O. Wilson proposed the importance of habitat corridors in the 1960s (MacArthur and Wilson 1967). Habitat reduction and fragmentation at a variety of spatial scales has been widely acknowledged as a primary cause of the decline of many species worldwide (Thompson 1994). Habitat fragmentation generally leads to smaller and more isolated animal populations. Smaller populations are more vulnerable to local extinction. To reduce the isolation of habitat fragments, many conservation biologists have recommended maintaining landscape "connectivity" - preserving habitat for movement of species between remaining fragments (BC/Washington Marine Science Panel 1994).

Many nearshore environments on the islands inventoried in 2012 and 2013 indicated continuous fringing eelgrass beds. These beds are the connectivity for salmon and other marine wildlife for shelter, food and refugia. Although they may be less biomass than continuous flat beds of eelgrass plants, they serve an important function and should be protected.

4.0 Impacts from Human Activities

The majority of the earth’s population now lives within 10% of land defined as “coastal”. One of the results of this increased pressure on coastal shorelines has been the destruction of approximately 215,000,000 acres of estuarine habitat worldwide (BC/Washington Marine Science Panel 1994). Seagrasses are in decline throughout much of the world, with rates of loss accelerating from a median of 0.9% per year before 1940 to 7% per year since 1990 (Waycott et al., 2009).

It has been estimated that 18% of coastal marine and nearshore wildlife habitat in the Salish Sea has been destroyed (British Columbia/Washington Marine Science Panel 1994). A large percentage of this decline is attributed to human impacts, including filling of shallow waters, dredging, and eutrophication (Short and Wyllie-Echeverria 1996). With the population of the Georgia Basin/Puget Sound forecasted to exceed nine million people by 2020, nearshore critical habitat loss is likely to increase.

The following is a description of some of the major impacts human coastal settlements have on eelgrass habitats and their functions.

4.1 Removal and Burial

Dredging and filling associated with the construction of harbors and ports have been the major cause of the decline in eelgrass beds (Levings and Thom 1994). The plants themselves are removed and then the physical, chemical and biological composition of the system is altered. Sediments raised by dredging can also bury plants growing nearby and alter eelgrass density by affecting water clarity. The reduction in plant density can further increase silt load because it reduces the capacity of eelgrass beds to trap sediments. It can also increase the erosion of bottom sediments because of the reduced root mass available to hold sediments together. The ultimate result is the reversal of the entire nutrient-flow mechanics of the ecosystem. Dredging activities include hydraulic clam harvesting, bay scallop raking, oyster harvesting and maintenance dredging of harbors. Filling in shallow wetland areas with the debris from wood processing (e.g. log dumps and log booms), sediment runoff from agricultural land and logging severely impact eelgrass habitats as well (Phillips 1984).

4.2 Pollution and Changes to Freshwater Input

Since estuaries are extremely vulnerable to changes in salinity and temperature, human activities affecting freshwater flows from streams heavily affect eelgrass meadows. Pristine watersheds surrounding estuaries provide steady supplies of fresh water and clean sediments to seagrass communities in the estuary. The opposite holds true as well: unhealthy watersheds increase the problems for seagrass distribution and productivity. Activities that cause increased nutrient loads in streams and rivers can result in overgrowth of algae that then die and deplete the oxygen from the bottom of poorly flushed bays. Chemical contaminants, such as fertilizers, pesticides and household hazardous wastes, runoff from streets and roads and runoff from industrial activities also add to the toxic composition of muddy bottoms of eelgrass meadows (BC /Washington Science Panel 1994).

Quiescent waters are more susceptible to chronic contamination than areas with high energy water flows (Harrison and Dunn 1999). In the Salish Sea, more than 540 sq. kilometers of intertidal gravel, sand and mud habitat are closed for shellfish harvesting because of bacterial

contamination. More than 730 sq. kilometers of shallow water habitat are unusable for crab and shrimp because of dioxin contamination from pulp mills. More than 32% of classified commercial shellfish growing areas in Puget Sound and Juan de Fuca Strait are either restricted or prohibited for harvesting due to water quality issues (Levings and Thom 1994). The same activities that impact shellfish, crab and shrimp harvesting also impact the health of eelgrass meadows.

Most toxic chemicals that accumulate in sediments in an inland sea such as the Salish Sea reside there for long periods of time unless they are physically removed. There is evidence that the roots of eelgrass take up a significant amount of heavy metals for long periods of time (e.g. lead, cadmium, zinc and chromium), thereby making up a large pool of heavy metals in coastal systems (Lyngby and Brix 1989). The consequences of toxic chemicals may have long term effects on eelgrass consumers, especially waterfowl and marine invertebrates.

4.3 Forestry Activities

Logging may cause scouring of stream channels and thereby increase sedimentation in estuaries, limiting the light available for photosynthesis. Bark chips from log booms smother eelgrass beds and form a blanket on the substrate, which leads to anaerobic sediment devoid of life (BC/Washington Marine Science Panel 1994).

4.4 Oil Spills

Oil spills pose serious threats to eelgrass communities growing in sheltered bays that are poorly flushed. These areas will tend to retain oil for long periods of time, becoming chronically contaminated. If spills happen in late summer or winter when leaf sloughing is at its peak, mats of drift blades will tend to catch and retain oil for later decomposition in the intertidal zone. Seed production and viability could be affected if a spill occurs in the spring (Beak Consultants 1975).

4.5 Shading by Overwater Structures

The apparent increase in demand for overwater structures in the Howe Sound Islands can have deleterious and cumulative impacts on the nearshore system. Shading, disruption of nearshore marine water movement, damage to the shore and subtidal habitat and operational pollution from boats can be some of the impacts (Van der Slagt et al., 2003).

4.6 Effects of Boating

Boat propeller cuts disturb eelgrass beds in shallow waters, both when boats are travelling through shallow areas and when they are approaching the shore to debark passengers, moor or anchor. The impacts from boating activities in eelgrass beds may be affecting waterfowl such as Black Brant, direct grazers on eelgrass. The Brant have been steadily decreasing in the Pacific Northwest since the 1940's (Phillips 1994).

Conserving eelgrass habitats enhances the amount of high quality rearing habitat as well as increases the ecological services for human communities, including erosion control, sediment settling and food production (shellfish and fish). With the population of the Georgia Basin/Puget Sound forecasted to exceed nine million people by 2020, nearshore critical habitat loss is likely to increase.

5.0 Eelgrass and Rising Sea Levels

Sea level rise and increased frequency and intensity of extreme weather are two expected and observed effects of climate change (IPCC, 2007, IPCC 2012). The Intergovernmental Panel on Climate Change warns that on small islands in particular, sea level rise is expected to exacerbate coastal hazards such as storm surges, floods and erosion (IPCC 2007).

Impacts of rising sea level on the coastline of the Salish Sea will be more complicated than the inundation of low-lying areas. The effects will differ significantly between different shoreline features. Inland movement of sea water (Titus and Strange 2008), as well as erosion and re-deposition of sediment will reshape the coastal landscape where there is room for the shoreline to shift and sufficient sediment is available (Mumford 2007). Increasing sea levels are expected to shift the zone in which sunlight is available to eelgrass beds. As a result, eelgrass beds are expected to shift inland unless barriers impede this shift (Titus and Strange 2008).

Eelgrass beds play a role in shoreline stability. Established eelgrass beds reduce currents, leading to increased sediment and organic detritus deposition (Durance 2002). Continuous dense eelgrass beds provide a buffer for incoming wave energy. The more the bed is fragmented by physical structures (e.g. boats, wharves, docks and overwater play structures), the less eelgrass beds function as an erosion buffer. Where shorelines are constrained by development or structures to prevent erosion (e.g. rip rap, sea walls), natural coastal features will be squeezed out and maintaining shoreline infrastructure and development will require increasingly expensive engineering measures (Mumford 2007). Pre-emptive planning for these changing conditions is necessary to protect settlement areas and shore features recognized for their natural and ecosystem services. This planning includes protection of natural buffers such as eelgrass beds. Preemptive planning for these changing conditions is necessary to protect settlement areas and shore features recognized for their natural and ecosystem services.

6.0 Mapping Methodology

Identifying and monitoring the distribution of native eelgrass habitats supplies much needed information for regional planning for conservation purposes. Maps and associated outreach activities also may lead to improvements in land use practices from increased knowledge and awareness about the habitat. Locating areas suitable for eelgrass restoration will lead to rehabilitation of eelgrass meadows as funding opportunities become available.

The eelgrass inventory for this project entailed determining the presence or absence of *Zostera marina* with an underwater towed camera and a boat, except in the Cufra Inlet (Thetis Island) where mapping was done by kayak without a towed camera due to shallow tides. GPS hand held units were used to record waypoints at approximately 10 m intervals in 2012. Accuracy of the GPS readings was on average +/- 2.4 metres. In 2013, a Trimble Pathfinder ProXR GPS was used, except in the Cufra Inlet where a handheld GPS unit was used. A detailed description of the methods used to map eelgrass habitats can be found in Appendix A.

The terms used to map eelgrass habitats are described below:

6.1 Distribution

The distribution of eelgrass within the bed is described for this inventory as either patchy or continuous. Patchy beds are those that contain isolated groups or patches of plants. Beds which are not patchy are classified as continuous; a bed that contains bare patches surrounded by eelgrass is classified as continuous. The boundary of a bed is determined by a shoot density of less than 1 shoot per square meter (Durance, 2002).

6.2 Form

There are two basic forms of eelgrass beds in the Pacific Northwest: fringing beds that occur as relatively narrow bands usually on gentle slopes, and more expansive beds that cover large areas such as tidal flats known as “flat” beds (Durance, 2002). Inter-annual variation within a bed is not well known, but appears to be less than ten percent (Dowty et al, 2005). Fringing beds are generally linear. Flat beds are areas of large eelgrass beds in embayments that extend deeper than fringing and more linear beds found along shorelines (Dowty et al. 2005). Distribution is often, but not solely, determined by aspect to dominant winds. Eelgrass distribution across a bathymetric gradient is limited at the upper boundary by the degree of exposure at low tide (desiccation) and by light limitations at the lower boundary.

6.3 Sediment Types

When possible, field observers rated the primary, secondary and tertiary occurrence of substrate types: sand, mud, pebble and cobble. A subtidal environment dominated by cobble might indicate a habitat more suitable for large kelps, which would shade any eelgrass shoots growing between the cobble during the summer months. A predominately sandy muddy bottom would support continuous eelgrass meadows in most cases, unless other factors are present, such as exposure to strong waves or the interruption of habitat by boat mooring buoys. In some cases substrate characteristics change with increasing depth (e.g. cobble to sandy or mud to cobble).

6.4 Percent of Cover

Percent cover was estimated in broad categories to increase accuracy of observation (<25%, 26-75%, >75%). The coverage of an eelgrass meadow reflects both the substrate and the flow of water through it. A calm environment with a sandy mud substrate generally supports a dense, continuous eelgrass bed with virtually 100% cover. The cover of eelgrass in areas subjected to strong currents is typically patchy. Areas with heterogeneous substrate (mixture of fine and coarse) also tend to be patchy (Durance 2002). The percent of cover data collected from this inventory is based on subjective approximations as observed through the lens of an underwater camera. The approximate percent of cover does give important information on the density and productivity of a bed.

6.5 Tidal Fluctuations

It was important to note whether the tide was running or slack at the time of the inventory. Eelgrass shoots will tend to bend towards the substrate during running tides; the accuracy of percent of cover is then very approximate.

6.6 Presence of Other Vegetation

Other types of algae were documented as broad or tuft. Broad algae, such as kelps, sea lettuce and *Sargassum muticum* can blanket the ocean floor and make it difficult to characterize substrate. They can also shade eelgrass in mixed substrates as they anchor to hard surfaces. Tuft algae, such as brown and red algae do not shade eelgrass but indicate presence of hard surfaces for attachment. The presence of kelps, predominately large brown kelps, was noted, as was the presence of other types of smaller algae and *Sargassum muticum*. *Sargassum* is an exotic species of algae that can overshadow eelgrass if the substrate is a mix of sand and cobble. The presence of *Sargassum* was noted especially off the shores of Thetis and North and South Pender Islands.

6.7 Visibility

Visibility was a subjective observation and was rated low, medium and high. The amount of visibility could impact in some instances the accuracy of the observations, namely characterization of substrate. For example, Gambier Island often had low visibility. This can be caused by winds, sediment flows from the lower reaches of watersheds, inputs from nearby streams and tidal/current movements. Low tide periods make for the best visibility.

7.0 Survey Limitations

The range of accuracy for all the islands surveyed in 2012 was within +/- 2.4 metres. Visibility at times was poor, due to tidal influences, sedimentation in the water column from stream outflows, summer plankton blooms and wind. During the last day of mapping Gambier Island in August,

2012 the wind was too high to continue the inventory. The survey team returned to complete the inventory in September 2012. During the 2013 survey of islands within Howe Sound, the winds were often a factor in scheduling the inventories. The average horizontal precision for the GPS unit used for the 2013 eelgrass inventory was 0.814 m.

Percent of cover of eelgrass shoots is difficult to assess accurately with an underwater camera but was deemed important to characterize. Areas of particular interest (e.g., impact of shoreline modifications, restoration potential) should be surveyed by SCUBA divers. Overall, this inventory is an indication of the presence or absence of eelgrass habitat and does not represent maps of the outer or shoreward edges of each bed, with the exception of Bowen, Passage and Bowyer Islands. Polygons were mapped for these islands where possible in 2013.

8.0 2012 Inventory Findings

Eelgrass inventories were conducted using ShoreZone inventory maps which include presence of eelgrass where available and the ShoreZone shoreline classification types (available for all islands) as a reference.

The Islands Trust eelgrass inventory is important, particularly on islands such as Gambier and Lasqueti, as the ShoreZone data was based on Orthophoto images alone. Valdes, Cufra Inlet (Thetis Island), Passage and Bowyer Islands were mapped in 2013, but are included here under the 2012 inventory, as they are within the Thetis Island and Gambier Island local trust areas which were surveyed in 2012.

8.1 Gambier Island Local Trust Area

Gambier Island was surveyed on August 21st-23rd and September 11th, 2012. This island has rugged shorelines, with steep slopes leading to the subtidal zone. Eelgrass habitat comprises approximately 8.3% of the island's linear subtidal shoreline. The majority of the eelgrass beds are fringing, the significance of which has been described earlier in this report as important to wildlife corridors.

Gambier Island has been highly impacted by historical log storage practices. Eight sites were identified as possible restoration areas starting with small eelgrass test plots (approximately 800 to 1000 shoots). Larger eelgrass restoration might occur if these test plots increase in shoot density and coverage and as funding opportunities arise. In some of these sites, backshore lands have been placed on the real estate market, which may impact future restoration efforts if docks and wharves are permitted as additions to upland development.

Boat mooring buoys and recreational equipment on the water over eelgrass beds as well as derelict log booming cables and booms were observed. There were numerous docks and wharves within eelgrass habitats. Several large shoreline modifications were also noted. These changes to

the shore can have long term impacts on nearshore environments, including wave scouring, shading and interruptions to sediment transport. With the presence of active and retired log leases, the island would greatly benefit from an eelgrass restoration strategy plan to increase value for both biological diversity and ecological services.

Bowyer Island was surveyed on October 11-12th, 2013 using the polygon mapping methodology. The west, north and east coasts of Bowyer Island are largely steep and rocky. The south shore is characterized by several coves, varying in substrate. Eelgrass was estimated to extend along 11.35% of the Bowyer Island shoreline, observed only in particular coves along the southern portion of the island. The area of polygons containing eelgrass was observed to total 3690 m² and the length of mapped line features was observed to total 70 m. In addition to continuous beds, 4 individual patches of eelgrass were recorded, noted on the map as points. Eelgrass around Bowyer Island was similar in appearance and percent cover to that surrounding Bowen Island, i.e. patchy and sparse. Percent cover within the polygons was less than 25%.

Docks were located in eelgrass depth in the bay on the central southern shore of Bowyer Island, within zone W2/W1a. Eelgrass beds in that bay were observed to extend as far as the docks. Several chains were located on the ocean floor in zone W2 on the southeast shore of the island, and a large dock is within or adjacent to the eelgrass bed.

Large schools of small fish were frequently observed while circumnavigating Bowyer Island, particularly on the west, north and east coasts. Also observed were large numbers of pile perch (*Rhacochilus vacca*) and rockfish. Harbour seals were observed in several locations.

Passage Island was surveyed on October 5th, 2103 using the polygon methodology. One of the most exposed islands of Howe Sound, this island is a good example of how people and eelgrass tend to occur within similar, sheltered environments. Most of the island is characterized by rocky cliffs, with a few beaches. Eelgrass was observed in sections of the east coast of the island, along 15.67% of the total shoreline of the island. The area of polygons containing eelgrass was observed to total 3718 m² and the length of mapped line features was observed to total 40 m. Percent cover within the polygons was less than 25%. Ropes were observed on the sea floor in eelgrass depth in an area of the southeast coast of the island in the presence of patchy eelgrass. In this area was also located a floating dock within eelgrass depth and approximately 12 moorings in the eastern part of the area, where the eelgrass was very sparse and patchy. A floating dock and mooring was located at the south end of the more northerly eelgrass polygon on the east coast of the island.

The islands west of Bowen Island were inventoried between August 4th - 6th, 2013. The linear shoreline extent of eelgrass habitat surrounding the associated islands within the Gambier Island Local Trust Area totals approximately 13.27%.

Most of **Keats Island** contains flat or fringing beds of continuous eelgrass habitat on sandy/mud substrates, especially on the north and west facing shores. Patchy eelgrass beds were observed on the southeast shores, most likely due to exposure to predominant winds.

A high preponderance of single eelgrass patches lie on the southern tip of Keats Island, which may be caused by exposure to southerly winds, but also to the multiple locations of docks, especially on the southwestern shore.

There is potential for eelgrass restoration on the northern end of the island at the eastern point of a log booming area if the log lease is retired in the future. This area has a rocky/cobble foreshore, forested backshore and water park with overwater floats. There are also many docks on the southwestern portion of the island, which may cause fragmentation of eelgrass beds. Where there were low rock/cobble substrates, no eelgrass was present.

Anthropogenic Impacts include the construction of docks, presence of moored boats in eelgrass beds, removal of native backshore vegetation and recreational use of the nearshore (water park overwater play structures).

Continuous flat eelgrass habitat was observed in the southeast and western shores of **Shelter Island** directly west of Keats Island. No eelgrass was found near **Home Island** south west of Keats Island. **Preston Island** south of Keats Island contains a small continuous eelgrass bed on the southeast shore. The backshore is forested. **Ragged Islets** contain mostly patchy eelgrass beds throughout most of the subtidal areas, except for the west facing side of the islets. Mooring buoys and docks were observed on the eastern shore and a float on the northern side of the islets. Most of the islets are forested and contain rocky substrate. The small islet to the northeast contains a fringing continuous eelgrass bed.

The majority of eelgrass surrounding **Pasley Island** south of Ragged Islets is flat and continuous in sandy/shell hash substrate. Vegetation along the foreshore has been cleared near many residences. Retaining walls, docks and mooring buoy chains interrupt eelgrass continuity along the south and southeastern facing shores. There is potential for eelgrass restoration on the southeastern facing shore almost at the midpoint of the island where there is a gap in an otherwise flat continuous eelgrass bed. On the northeastern shore of Pasley there is a dense eelgrass bed that could serve as a possible harvesting site for restoration of lost or damaged eelgrass habitat.

No eelgrass was noted off of **Worlcombe Island** southeast of Pasley Island.

Mickey Island northeast of Pasley Island is surrounded on its western, southern and northern shores by mostly fringing patchy beds of eelgrass in sandy/shell substrate. Eelgrass is mostly likely limited on the eastern shores by low rock/boulder substrates. The rocky shores are surrounded by natural forests. Minimal anthropogenic impacts were observed.

To the west lies **Hermit Island**. The majority of eelgrass habitat is flat and continuous in sandy/shell hash substrates. Most of the habitat is located on the east facing shoreline, though the foreshore is cobble or low rock. The majority of the backshore is forested. In some areas, dock construction interrupts eelgrass beds. Harlequin ducks were observed within an eelgrass area on the southwestern side of the island.

Little Popham Island south of Hermit Island has mostly continuous flat beds of eelgrass to the southwest and northeast next to rocky shores and forested backshores. It is very likely eelgrass is limited by the subtidal low rock/boulder substrate surrounding the remaining areas of the island. Most of the eelgrass around **Popham Island** lives on the northeastern portion of the island in sandy/shell substrate and consists mostly of continuous and flat beds along steep rocky shores.

Grace Island southwest of Gambier Island contains mostly fringing continuous eelgrass habitats in shell/sand substrates next to steep rocky foreshores and forested backshores. A large school of fish was observed. **Woolridge Island** to the northwest of Gambier Island contains mostly flat continuous beds of eelgrass on its north facing shores. The beds are very robust, with a possible harvesting site on the east shore if restoration is undertaken in this area. There is woody debris noted near a breakwater on the north western facing shore of the island.

The majority of eelgrass habitat surrounding **Anvil Island** northeast of Gambier Island lives on the southeastern shores and is characterized as fringing. Most of the island is classified as cliff or low rock/boulder which is limiting for eelgrass growth. The presence of numerous mooring buoys and retaining walls impact the habitat. One potential restoration site was identified on the eastern shore.

The islands near the Sunshine Coast within the Gambier Island Local Trust Area were not mapped in 2013 due to poor mapping conditions and scheduling limitations. There are plans to inventory them in 2014, subject to funding and capacity.

8.2 Lasqueti Island

Lasqueti was surveyed from July 17th to July 19th 2012. This island's shoreline is composed of substrate formed from shallow stony deposits over bedrock. Shallow sandy/muddy benches extend into the subtidal zones. Eelgrass comprises approximately 13.8% of the island's linear intertidal and subtidal shoreline. The majority of the eelgrass habitat is flat, dense and continuous. Most of the backshore lands were naturalized with little development.

Possible impacts that could be occurring would be from boat mooring buoys anchored within eelgrass habitats, grazing by Canada geese, historical damage from log booming practices, hardened shoreline modifications and site locations of some aquaculture enterprises. False Bay could benefit from more detailed eelgrass mapping, as the multiple mooring buoys might be impacting eelgrass habitats.

8.3 North Pender Island

North Pender was inventoried on July 3rd, 4th and 6th 2012. Eelgrass comprises approximately 11.6% of the island's linear intertidal and subtidal shoreline. The majority of the eelgrass beds are flat and continuous. The protected nature of North Pender results in a relatively high proportion of soft substrate in shallower areas.

Impacts include housing developments with accompanying tree and shrub clearings, rip rap and rock wall modifications, some of which were constructed below the high water line, direct raw sewage outfall at Port Washington which would directly affect the water quality for eelgrass productivity, the presence of Canada geese, direct grazers on eelgrass shoots during low tides, and mooring buoys within eelgrass beds. Port Browning might be an appropriate site for eelgrass restoration as the substrate is suitable and there is a small bed on the northeast side.

8.4 South Pender Island

South Pender was surveyed on July 6th 2012. Eelgrass comprises approximately 8.5% of the island's linear intertidal and subtidal shoreline. South Pender has more exposed shoreline therefore less eelgrass is to be expected. Roughly the same proportion of flat and fringing beds are present with slightly more than half of them being continuous.

8.5 Mayne Island

Mayne Island was surveyed from 2009-2012 using two methodologies on a variety of platforms including: 1) delineation and creation of polygons (with towed underwater camera, on foot, by kayak, by free diver), 2) linear presence/absence (by kayak). Data was converted to presence/absence line format for incorporation into the 2012 Islands Trust Eelgrass Inventory.

Mayne Island is mostly protected except on the Northeast side which is exposed to winds from the Strait of Georgia. Eelgrass comprises approximately 22% of the island's linear intertidal and subtidal shoreline. The Mayne Island associated islands, Georgeson Island and Curlew Island, contain 15.7% and 24.8% respectively.

Evidence from the Mayne Island Conservancy's eelgrass monitoring program and historical anecdotal evidence has shown loss in intertidal eelgrass in Miners Bay and two Southeast facing bays on the Southeast side of Mayne. Reasons for loss are unknown, but ongoing monitoring will indicate natural variability in these eelgrass beds. Potential impacts include grazing from Canada geese, anchoring, mooring buoys, trampling by kayakers and damage from boats and propellers. Winter heavy rain events could be introducing increased sediment loads into eelgrass beds, but this would need to be studied.

Gallagher Bay (on Navy Channel) and Conconi Reef Park are potential eelgrass restoration sites. They both have large bare areas adjacent to continuous eelgrass beds and have suitable substrate.

8.6 Thetis Island Local Trust Area

Thetis and its associated islands were surveyed July 31st through August 3rd, 2012, except for the inside of Cufra Inlet which was inaccessible because of low tides, and Valdes Island. The Cufra Inlet survey was completed in the summer of 2013. Valdes Island was surveyed July 29th, and 30th, 2013.

Approximately 26.6% of the linear subtidal shoreline on Thetis Island is composed of eelgrass habitat, 72% of which is continuous. Fringing continuous eelgrass beds were observed off the western shore of Thetis where the ShoreZone map indicates a preponderance of low rock and boulder (not a typical shoreline type for eelgrass). **North Cove** is also rich with an abundance of eelgrass, except where it is shaded by overwater structures.

Cufra Inlet contains dense (26-75% cover) flat continuous eelgrass beds. The inside of the inlet was surveyed during the summer of 2013 by local residents using kayaks and hand held GPS units but without the use of an underwater camera, as the water was shallow enough for eelgrass to be observed from the kayaks. Low tides in 2012 prevented an aluminum boat from approaching close to shore during the low tides occurring during the survey. The continuous bed begins on the western shore of Cufra Inlet as a narrow 1 m wide swath on the shoreward side and then widens out. An abundance of drifting sea lettuce (*Ulva* spp.) was observed within this area. Eelgrass became denser seaward in the muddy/shell hatch substrate. The substrate became sandier as the mappers traveled towards the mouth of the channel. Patches of sand dollars were noted as the inlet widens and the eelgrass extends towards the eastern shore. Diatoms were noted growing on the eelgrass blades. At the western edge of the mouth of the inlet eelgrass is patchy and sparse despite its ShoreZone classification of 'cliff'.

Clam Bay eelgrass was dense and continuous.

Telegraph Harbour on Thetis Island had a preponderance of algae (*Ulva* spp.), *Sargassum muticum* and filamentous algae growth. Visibility was poor. Upland and shoreline development (rip rap, retaining walls and cement ramps) with accompanying vegetation clearing most probably has led to higher sedimentation in the nearshore waters.

Understory kelps were observed at most sites, although no fish or crab species were present at the time of the survey in the majority of the survey area. Possible impacts from boat moorings within eelgrass beds (e.g. **Ruxton Island** had > 15 boats moored off shore in one small area), recreational overwater play structures, shoreline modifications and nutrient run-off could be impacting nearshore habitats. Where there was suitable substrate for eelgrass as indicated by the ShoreZone data, eelgrass was present, with the exception of the narrow channel between Thetis and Penelakut Islands. However a long-time resident remembers eelgrass presence there approximately 40-50 years ago. Islets and small islands are important refugia for wildlife and often are less impacted than the surrounding larger islands.

A short description of the smaller islands and islets associated with Thetis Island are described below.

Percentages of eelgrass for each associated islet are:

Island	Eelgrass % Cover
Ruxton	11.6%
Pylades	0%
Bute	50.3%
Dunsmuir Islands (2)	34.7%
Hudson	30.9%
Reid	3.9%
Dayman & Scott Islands	39.6%
Valdes	12.7%

Hudson Island west of Thetis is rich with continuous fringing beds of eelgrass (26-75% cover) on both its eastern and western subtidal areas. **Dayman Island** has just under approximately 25% coverage of patchy eelgrass habitat mostly on its eastern facing side. **Reid Island** to the east has dense patches of fringing eelgrass on its northeast facing shore.

Ruxton Island to the north of Thetis has flat, continuous (less than 25% cover) eelgrass beds within sheltered sites on the western facing area; an abundance of nudibranchs was observed on eelgrass blades. The eastern shore, with the exceptions of some sites with fringing patchy beds, is too deep for eelgrass growth.

Whaleboat Island to the east of Thetis had too steep a drop off to be suitable for shallow eelgrass habitats. **Tree Island** contained 100% cover of understory kelps, which is an indication of a dominance of cobble/pebble substrate. As well, the subtidal area is too deep for eelgrass production.

Bute Island off of Ladysmith Harbour contained dense continuous beds because it is surrounded by a shallow bay with sandy substrate. There is a potential eelgrass restoration site on the northeast side of **Dunsmuir Island**, as it is composed of clean sandy substrate in a protected site. The narrow channel between Dunsmuir Island and Ladysmith Harbour contains continuous dense flat eelgrass beds.

Valdes Island was surveyed between July 29th and 30th, 2013. Eelgrass covers 12.69 % of its linear subtidal shores. The majority of the habitat is flat and continuous, with most of the locations cited on the northeastern and southwestern shorelines. Although the majority of the shorelines

on the western portion of Valdes are ShoreZone classified as low rock/boulder or cliff, the presence of flat continuous beds with bare patches was noted on the north and south western shores. Three potential restoration sites were identified; one on the central western side of the island, the second site on the northern tip of the island containing a small degraded eelgrass bed adjacent to the BC Parks dock, and the third is located on the southwestern shore which might have been historically impacted by log storage. The substrate at this site is suitable for a transplant; however *Ulva* spp. is present, which might be an indication of a high level of nutrient inputs.

The location of mooring buoys in eelgrass habitats with fifty-one buoys observed within beds and the interruption of eelgrass continuity by the construction of docks are the major anthropogenic impacts affecting eelgrass habitats on Valdes. The majority of the shoreline is naturally vegetated.

9.0 2013 Inventory Findings

The islands mapped in 2013 for eelgrass (*Zostera marina*) within the Islands Trust Area Islands include:

- Denman Island Local Trust Area,
- Hornby Island Local Trust Area,
- Ballenas – Winchelsea (Executive Islands) Local Trust Area,
- Gabriola Island Local Trust Area,
- Galiano Island Local Trust Area,
- Valdes Island and Cufra Inlet in the Thetis Island Local Trust Area
- Bowen Island Municipality
- Gambier Island Local Trust Area Associated Islands in the Howe Sound
(i.e. excluding the islands off of the Sunshine Coast)

The characteristics and locations of eelgrass habitats for each island are described below in order of the beginning dates eelgrass inventories occurred. Note that Valdes and Cufra Inlet are described in Section 8 above as they are in the Thetis Island Local Trust Area. Similarly the Gambier Island Local Trust Area Associated islands are also described in Section 8 as they are in the Gambier Local Trust Area. Both Thetis and Gambier Islands were mapped in 2012.

9.1 Galiano Island Local Trust Area

Galiano and its associated islands were inventoried over seven days between June 26th and November 25th, 2013. Approximately 16.66 % of the linear subtidal shoreline of Galiano Island is eelgrass habitat.

ShoreZone maps indicate that most of the southwestern and northeastern shorelines of Galiano Island are not suitable substrates (coastal bluffs and low rock/boulder respectively), except where there are sheltered embayments. However there are notable exceptions over the north, south west, south and eastern areas of the entire island.

The eelgrass distribution on Galiano is 88% continuous; 12% patchy. The placement of mooring buoys (at least 14 were noted within eelgrass beds, especially on the southwestern shores of the island), private docks (at least 12) and log storage have damaging effects on the habitat's continuity and function as a wildlife corridor. The construction of retaining walls (rip rap, rock and wooden) and the removal of backshore vegetation (at least 10 sites were observed) are obstacles for eelgrass to flourish in certain sites.

Most of the backshore on Galiano Island remains naturalized, with notable exceptions where trees and understory vegetation surrounding residences are removed and where shores are modified with retaining walls. Exotic invasive plants include English ivy, St John's Wort and gorse. Heavy epiphytic algae growth on eelgrass blades were noted within **Montague Harbour**, a possible indication of a high level of non-point source pollution. Another site for pollution is the public dock in **Whaler Bay** where boats are worked upon. Best management practices are recommended for boat sewage disposal and using tarps for collection of boat paint chips at each location.

There is the potential for eelgrass restoration within Whaler Bay, as the channel in front of the public dock contains a narrow band of eelgrass that could be expanded shoreward if log leases were retired in the future. In November, bufflehead and Barrow's Goldeneye as well as schooling forage fish were observed. Patchy eelgrass beds were noted off the eastern shores of Galiano Island. This area is ShoreZone classified as low rock/boulder. Four mooring buoys were located with these beds.

The eelgrass habitats covering the associated islands of Galiano comprise approximately 19.98% of the islands' linear shorelines. **Parker Island** has extensive eelgrass on its northeastern shores (96% continuous). The construction of docks and the placement of mooring buoys within eelgrass beds, however, may be impacting the habitat. Most of the eelgrass surrounding **Gossip Island** lives on the island's east facing shores is continuous (95%); however docks (7 were noted within the eelgrass beds) interrupt their form and function. Mooring buoys (3 observed) are situated within the existing beds on the south-western facing shores also disrupt the connectivity of eelgrass habitats.

No eelgrass was observed on **Ballingall** and **Lion Islets**, **Wise**, **Charles**, **Sphinx** or **Julia Islands**.

9.2 Gabriola Island Local Trust Area

Gabriola Island and associated islands were surveyed between July 8th and 21st, 2013. Gabriola Island's linear shores are comprised of 24.8 % eelgrass, with 89% continuous distribution. Two potential eelgrass restoration sites were identified on this island. The first is on the southwestern shore facing **Mudge Island** near an active log booming site. When the log lease is retired at this site, a small eelgrass transplant (100-500 shoots) could indicate whether the area is suitable for a larger transplant. The second site is on the northeast tip of Gabriola Island where a small existing bed could be expanded.

Wildlife in some areas abound, including Canada geese, an abundance of fish species, Great Blue Herons (22 at the southern channel entrance between Gabriola and Mudge Islands), sand dollars and Bald Eagles. Beaches that have suitable substrate for sand lance and surf smelt spawning were also noted. Healthy eelgrass beds near the **Malaspina Galleries** in Gabriola Sands Provincial Park are not surrounded by mooring buoys and docks and are thriving in 4-5 metres water depth, although the area also contains rocky substrates.

Possibly the biggest impacts to marine wildlife habitats on Gabriola and its associated islands are the locations of floats and mooring buoys (in one embayment on the northwestern shore of Gabriola, over 12 floats – moorings and/or crab traps – and 14 buoys were observed in a continuous eelgrass bed); construction of retaining walls (nine riprap or rock walls identified); and, the removal of native backshore vegetation (13 sites). Numerous moorings are located in an otherwise robust eelgrass bed in **Degnen Bay**.

The eelgrass coverage for the Gabriola associated islands' linear shorelines totals 19.98%. Near the eastern shore of **DeCourcey Island** south of a marine park there are many docks and boats. Poor water quality was noted, and there are no washroom facilities at this location. No marine life was observed growing on the seafloor. North of the marine park there is a potential restoration site facing a steep rock ramp foreshore and a steep grassy conifer backshore near a former log booming site.

Snake Island has the potential for eelgrass restoration on its southern tip where there is a protected area with suitable subtidal sandy mud substrate, although this location may be too close to active boating. Seal pups and oyster catchers were cited near a large mussel bed.

There was no eelgrass habitat observed on **Hudson Rocks**. Marine life there included seal pups hauled out, bird habitats, cormorants and oyster catchers. The shell hash substrate off of **Five Finger Island** was noted to be situated too deep for eelgrass growth.

Mudge Island also has a potential eelgrass restoration site on its southeastern shore. Kelps are mixed with sandy/muddy/shell substrate. Most of the backshores are naturally vegetated, with exceptions near residential developments where mooring buoys are situated within eelgrass

beds (4 observed). The eelgrass habitat observed on Mudge was a mix of patchy/ continuous and flat / fringing beds on the eastern shores of the island. One bed in particular, located mid- island on the eastern side extended 100 metres shoreward beyond the waypoint, but the water depth was too shallow to delineate the bed.

Eelgrass on Link Island is characterized as flat continuous beds on its eastern shores. On the south shore of Link Island there are multiple docks (4) and mooring buoys (6).

Continuous fringing beds lie next to the northwest shores of Breakwater Island. Near Saturnina Island there are fringing continuous beds of eelgrass habitat on the western and northern shores.

Bath Island has a wide rock ramp in front of a windblown forest with a patchy bed with two larger patches surrounded by kelp and *Sargassum muticum* on its northwestern shore, while on its western shore there was a flat continuous bed.

Eelgrass habitat on Tugboat Island is characterized as narrow beds tucked between shore and wharf floats on the eastern side of the island and between the Tugboat Island and Sear Island to the south, which has flat continuous beds on its western shores. Continuous flat beds lie at the entrance to a marina on Vance Island. A rock/boulder shoreline with a, private dwelling with floating dock and several moorings are near flat continuous eelgrass habitat on Acorn Island.

9.3 Denman Island Local Trust Area

Denman Island and its associated islands were inventoried on several boat expeditions between August 20th and September 15th, 2013. In the Denman Island Local Trust Area 33.24% of the linear shore contains eelgrass. In some areas, especially in eastern subtidal areas, patchy eelgrass was observed amongst broad leaf kelps and *Sargassum muticum*, where the substrate is classified as low rock/boulder. A potential restoration site is located on the southwest area of the island near Metcalf Bay and is close to a site that could be used for harvesting transplants. The substrate south of this site gradually changes to cobble and gravel. Most of the beds surrounding the island are fringing, most likely due to coarser substrate changes at depth.

Eelgrass habitat is situated on the north eastern shores, classified by ShoreZone as sand/cobble and where numerous overwater structures are located and associated with industrial aquaculture activities. The eelgrass here was predominately patchy; most likely there are more patchy beds both shoreward and seaward of the mapped area. This area is the second most patchy eelgrass habitat observed, second only to areas in Howe Sound.

The majority of the backshore is not heavily impacted by development; most of the residences had either forested or grassy areas between them, with a minimum of landscaping. Abundant species of birds including black legged kittiwakes, surf scoters, marbled murrelets, grebes, harlequin ducks, surf scoters, herring gulls, and other marine wildlife species such as hooded nudibranchs, sand dollars, sand lance juveniles and abundant schooling fish were observed.

Sandy Island north of Denman Island contains continuous (99%) eelgrass habitats although the southern shores are ShoreZone classified as sand/cobble and the northern areas are classified as altered. Sand dollars were observed on both eastern and western sides of the island. **Seal Islets** were surrounded by fringing continuous (81%) eelgrass habitats. Associated with these beds were observed marbled murrelets and rafts of harlequin ducks and surf scoters, kittiwakes, gulls and seals. The backshore consisted of flat shrub, herbaceous and grassy slopes. . No eelgrass habitat was observed near **Chrome Island** due to unsuitable rocky substrates.

9.4 Hornby Island Local Trust Area

Eelgrass beds on Hornby Island were mapped over several days between August 21st and September 12th, 2013. The linear shoreline of the Hornby Island Local Trust Area is composed 31.70 % of eelgrass habitat. Large areas on both the western and northeastern shores of Hornby have continuous (90%) flat beds, although the classification by ShoreZone of these shorelines is low rock/boulder. The small areas of eelgrass found in these otherwise rocky cobble areas are valuable as critical habitat and corridors for marine life.

Most of the backshore is naturalized, even where residential houses are situated. Suitable substrate for spawning sites for forage fish was identified on the north eastern shores. Three potential restoration sites were also noted; one near this area for potential forage fish spawning, the second within a sandy embayment on the eastern shore (if boat anchoring pressures were decreased), and the third near the Hornby Island ferry terminal on the western side of the island (eelgrass was noted just north of the terminal growing in pebbles). There is also an opportunity for a community clean-up of underwater debris near a breakwater and marina on the southern end of the island. On **Toby Island** dozens of seals were hauled out.

9.5 Ballenas – Winchelsea (Executive Islands) Local Trust Area

The islands within the Ballenas – Winchelsea Local Trust Area were surveyed for eelgrass habitat between November 21st and 23rd, 2013. The total linear shoreline coverage of the Local Trust Area is 1.4%.

Mistaken Island west of Parksville has two eelgrass sites, one fringing patchy bed and the second within a cove with a dock, both on the southwestern shore. A flat continuous bed lies between the channel separating the **Ballenas Islands**. A continuous bed also lives on the north shore of the south island, punctuated with rock substrate. A school of forage fish, possibly sand lance was observed at the time of the survey in the shallow subtidal zone.

A small flat continuous bed on the west facing shores of the **Ada Islands** also may serve as suitable habitat for forage fish, prey for ancient murrelets, of which one was cited by field staff (unconfirmed). A second eelgrass bed is situated on the western shore of the west Ada Islands. The substrate at this location is primarily sandy with a secondary substrate of bedrock with associated intermixing rockweed and detritus. A seal haul out with 61 seals was noted near this site.

A small flat continuous eelgrass bed is located on the northeastern side of **Southey Island**. No eelgrass habitats were observed on **Gerald, Yeo, Amelia, Ruth** or **Winchelsea Islands**.

9.6 Bowen Island Municipality

Bowen Island was surveyed between Aug 6th -11th and Oct 4th, 5th and 12th, 2013 using the polygon mapping methodology. The island is characterized by a mix of sandy bays and steep shorelines. Large homes are common, with docks constructed both in the bays and on the steep cliffs. Bays, which are areas in which eelgrass is expected to grow, were also the location of waterfront homes and associated docks (both land-based and floating), moorings and anchored boats.

Eelgrass was estimated to extend along 11.6% of the shoreline of Bowen Island. The area of mapped eelgrass polygons was observed to total 41,917 m² and the length of mapped line features was observed to total 958 meters. Percent cover was low, however, and in addition to continuous beds, 84 individual patches of eelgrass were recorded and noted on the map as points. Eelgrass was observed within bays and straight sections of coastline on the southwest, northwest, northeast tip, east (Mannion Bay and north) and southeast coasts.

Around much of the island eelgrass was characterized by frequent individual patches, with each patch often consisting of very few shoots. Patches on the west coast were observed in areas that, from the shoreline or ShoreZone analyses, would not have been predicted, as the plants occurred seemingly opportunistically in patches of soft substrate located amid boulders and other coarser substrate. Percent cover even in continuous beds was consistently far less than 25% and noticeably sparser than other islands within the Islands Trust areas also surveyed during the 2013 mapping season.

Docks in areas such as in **Tunstall Bay** were located in depths suitable for eelgrass growth. Distances between some points on the polygon mapped in Tunstall Bay are longer than 20 meters as the eelgrass field surveyors needed to navigate around swimmers, docks and moored boats. Large clusters of sunflower stars (*Pycnopodia helianthoides*) were observed in the bay on sandy bottoms that did not contain eelgrass. Docks and moorings were also located in eelgrass depth elsewhere on the west coast of Bowen Island (e.g. the relatively straight shoreline north of Bowen Bay, King Edward Bay, the shoreline north of King Edward Bay and Galbraith Bay).

In some sites such as **Galbraith Bay** and **Columbine Bay**, eelgrass was only observed on one side of the bay despite suitable sandy substrate on the other side. For example, the substrate on the north side of Galbraith Bay was bare sand. There were several moorings in that bay. Eelgrass in Columbine Bay was sparse and appeared unhealthy; individual clumps were surrounded by bare sand. One hypothesis for this is that eelgrass may be impacted by boat wakes in the area. Boats were moored throughout eelgrass depth in **Cates Bay**.

Multiple beds of continuous eelgrass were identified throughout **Mannion Bay** between zero and more than 5 meter depth relative to chart datum. These beds, however, were not as dense as would be predicted given the soft substrate and sheltered environment. In the northeast side of the bay bare sandy fringing beds are interrupted by the construction of docks.

Mannion Bay is heavily used for boat anchoring, mooring and docking within depths suitable for eelgrass growth. The construction of docks and floats and their associated chains are impediments for eelgrass productivity in this area. Multiple adjacent docks have been constructed within eelgrass depth. Ropes and chains from docks, moorings or anchors had dragged on the sea floor, apparent due to the patterns they had created in the sand. The motion of the chains due to waves and currents can damage or uproot eelgrass.

Eelgrass otherwise appeared healthy in Mannion Bay and there are opportunities to restore lost eelgrass habitat if boat anchoring were restricted to a defined area outside of the depth range for eelgrass growth, i.e. if they were limited to 6 m depth or deeper. Schools of fish were observed within the existing sparse eelgrass; therefore, restoring the eelgrass in the area would serve to enhance fish habitat. Although it was not included in the project deliverables, the research team had been requested to look for evidence of litter on the sea floor in this bay; however, only a few cans and the possible remnants of a shopping cart were observed. Some of the moorings and anchored boats appeared derelict. Many crabs were observed on the south side of the bay, but were not identified to species.

No eelgrass was observed in **Snug Cove** including the head of the cove, near Crippen Park beach. Possible reasons include dredging, ferry wakes, eutrophication and boat traffic associated with the marina, and pollution of the substrate due to chipped wood debris. No flora was observed on the sea floor except for encrusting algae. There are restoration opportunities for the nearshore environment by Crippen Park beach if the historical and present impacts from the marina and former log booming site are addressed.

The inner portion of the eastern cove of **Konishi Bay** on the south coast of the island appeared suitable for eelgrass due to the sandy substrate and sheltered cove with a sandy beach. The substrate was bare sand, however. Eelgrass was observed in deeper locations of that bay. Removal of native plants and retaining wall constructions were noted around residences. In another eelgrass location in the southern portion of Seymour Bay/Seymour Landing where an adjacent coastal lot was for sale, coastal vegetation had been cleared and there is already evidence of slope failure both at the top and foot of the slope, despite installation of riprap. Water flow had also been channeled in the area, which could intensify water and sediment flow into the nearshore environment. Slope failure is a possible threat to eelgrass through smothering by eroding sediments. Shoreline hardening also increases wave energy and wave deflection, which can scour shorelines (Lamont 2013).

The area around **Cape Roger Curtis** has been of concern to local residents due to the construction of large docks and potential for damage to submerged habitats. Eelgrass was not observed around the exposed cape, as the observed substrate was steep and rocky. Kelp was observed in the area, however. Chains from the new construction were observed on the ocean floor. Kelp beds are a major feature along the rocky parts of the Bowen Island shoreline. Several schools of small or juvenile fish were also observed around the island.

10.0 Threats to Eelgrass Habitats

The impacts from human activities have been described previously (Section 4.0). Other field observations are described below.

There seems to be an increase in the abundance and distribution range of the invasive seaweed, *Sargassum muticum* within the Islands Trust Area, although there is at present no research to substantiate this. Although the plant settles and grows on cobble, surrounding eelgrass in sandy/muddy sediment can be shaded out by its overarching canopy. The presence of *Zostera japonica* was noted on Lasqueti and Thetis Islands and other areas within the Islands Trust. This non-native species of eelgrass is not known to compete with *Z. marina*, though it can be found mixed with the native eelgrass in the lower reaches of the intertidal zone.

Though there is some disagreement about the causes of epiphytic algae growth on eelgrass blades, it was noted within Telegraph Harbour on Thetis Island and Montague Harbour on Galiano Island. This could be an indication of excessive nutrients, causing an abundance of algae growth on the blades and blocking light, nutrients and gas exchange (Mumford 2007).

Canada geese are infamous for their grazing on eelgrass shoots. They were noted in large numbers on Lasqueti, Gabriola, and North Pender and South Pender Islands. Overgrazing of shallow eelgrass beds might be a growing concern as the birds are increasing in range and numbers.

As winter storms intensify, there might be an increase in burial of eelgrass shoots by sand over wash. Monitoring eelgrass habitats over time in selected locations vulnerable to storm events might shed light on the effects of climate changes upon the nearshore environment.

Eelgrass Restoration

11.0 Opportunities for Eelgrass Restoration

Thirteen areas in 2012 and nineteen in 2013 were identified as potential sites for eelgrass restoration as indicated in the legends on the maps produced by this project. When funding is available, these sites can be further investigated. The history of eelgrass transplants and their success in British Columbia to date is described below.

11.1 History of Eelgrass Restoration

In the Pacific Northwest, the history of success for *Zostera marina* transplanting projects was dismal prior to 1985. Initially transplant techniques were developed and successful on the Atlantic coast. However, these techniques were not well suited to the Pacific north coast environment and eelgrass. Many of the early transplants were conducted without a thorough understanding of eelgrass physiology and ecology; the donor stock was not always well suited to the area where they were transplanted, and the biophysical conditions of the transplant site were not always appropriate for the species (Durance 2001).

Since 1985, knowledge and experience from adaptive management practices have resulted in a higher success rate for focused mitigation and enhancement projects along the Pacific coast (Thom, Borde, Williams, Southard, Blanto and Woodruff 2001). Factors that led to a higher success rate include the correct selection of physical attributes for the restoration area, including elevation, substrate composition and light and current regime. The selection of the most suitable ecotype or genotype increased the likelihood for success and rate of production. The criteria for success included shoot density and area re-vegetated (Durance 2001).

11.2 Criteria for Successful Restoration

In British Columbia, the criterion for transplant success is based upon the mean shoot density being equal or greater than the area of adjacent natural beds and the area coverage. Projects are thus considered successful if the habitat that was created provided habitat equal in eelgrass productivity (shoot density) to that which it was designed to replace (Durance 2001).

Site selection with the appropriate biophysical characteristics (salinity, sediment type, current velocity, light/depth, temperature, and pH), using suitable plant donor stock (ecotype), using an appropriate transplanting technique and handling the donor plants with care are necessary for successful transplants. Several restoration transplants have occurred in Squamish, the Sunshine Coast, Campbell River, Cowichan Bay and Saanich Inlet. Most of the locations have been impacted by historical log storage practices. The majority of these transplants are considered successful based on monitoring of shoot densities and area coverage post-transplant. They were completed under the supervision of a scientific advisor with community volunteer support and a Workers Compensation Board (WCB) certified team, with funds collected by environmental conservation groups.

12.0 Recommendations

Globally, eelgrass has been used as an indicator of water quality (Neckles 1994). Often, a bed will decrease or increase in width and length dependent on light availability. The lower depth distribution of eelgrass is related to overall water clarity. Water quality, including water clarity, is affected by land practices and water uses. If, for example, a large scale development occurs on shore near an eelgrass bed, the bed may decrease in size because the water quality in the nearshore is consistently compromised by the increased pollution load, known as non-point source pollution, frequently delivered by the storm water system. When the amount of light reaching the

plants is limited by shading from increased sediment or plankton blooms associated with increased nutrients from land, eelgrass meadows adapt to the poor light availability through dieback, decreases in density or width and migration to shallower depths.

The Islands Trust Area is home to more than 25,000 people and is located between the highly populated centres of Vancouver, Victoria and Nanaimo. However, only approximately 12.5 % of the marine environment has some type of protection. Most of this protection is in Rockfish Conservation Areas, with Provincial and Federal Marine Protected Areas accounting for only 1.53% (Islands Trust Fund Regional Conservation Plan 2011-2015). Sound decisions by local trustees and an educated public are necessary to protect the functions of the nearshore for all who benefit from their healthy ecology.

A set of recommendations is listed below to contribute to the conservation work of the Islands Trust and Islands Trust Fund.

12.1 Education

1. Educate boaters and coastal residents about the presence and importance of eelgrass beds.
2. Encourage shoreline landowners to replace light-impenetrable docks with materials that allow light penetration.
3. Encourage signage at boat ramps reminding boaters to avoid eelgrass beds in shallow water.
4. Build public awareness about the importance of reducing nutrient inputs in marine riparian areas; encourage protection and restoration of wetlands and the construction of retention ponds to filter land based pollutants; and encourage reduction in the use of fertilizers, pesticides and herbicides.
5. Develop a long term public outreach nearshore marine education strategy that includes new shoreline property owners.

12.2 Regulatory and Enforcement

1. Limit dock development, particularly in established and potential eelgrass areas (i.e. areas where substrate is suitable for eelgrass growth).
2. Encourage creation of “No anchoring/mooring” zones in suitable eelgrass areas (based on substrate, depth and observed presence of eelgrass); encourage movement of moorings to areas that are too deep for eelgrass.
3. Limit shoreline development; maintain a coastal riparian zone that will enable inland shift of eelgrass beds as sea levels rise.

4. Create and implement appropriate setbacks for built structures from the nearshore.
5. Limit or reduce overwater structures; increase shared community docks and wharves when possible.
6. Require removal of illegal shoreline modifications; require restoration or removal of aged derelict structures where possible.

12.3 Opportunities for collaboration with other agencies

1. Encourage and undertake as resources allow regularly scheduled monitoring of sensitive or vulnerable shorelines; make monitoring results readily accessible to all.
2. Where boat traffic must go through an eelgrass bed, encourage establishment of marked boat channels so that the least damage is done to the habitat.
3. Create protected marine zones and encourage planned siting for mooring buoys for recreational boats around eelgrass beds.
4. Promote management strategies to mitigate conflicting uses in eelgrass habitat, such as oyster and clam harvesting, boating and anchoring in meadows and near-shore development requiring dredging.
5. Promote restoration of natural hydrology when opportunities arise.
6. Promote restoration of eelgrass habitats where possible.

13.0 Conclusion

Changes from increased human population, more frequent and intense storms and changes in sea levels and pH of the oceans emphasize the need to monitor eelgrass habitat and protect it with sound science-based policies and regulations.

Eelgrass meadows function as natural marine sanctuaries, as indicators of nearshore ecological health, and as sequesters of atmospheric carbon. As well, these valuable habitats are important sources of nutrients for local and off-shore marine and nearshore systems. The conservation, protection, monitoring and restoration of native eelgrasses within the Islands Trust Area is and will continue to be a long term smart investment in the social, cultural and biological vitality of the islands.

References

- Beak Consultants. 1975. Biology oil impact literature review final report 1975. Baseline Study Program, North Puget Sound, Dept. of Ecology, Olympia Washington.
- Bostrom C., Bonsdorff E. 2000. Zoobenthic community establishment and habitat complexity – the importance of seagrass shoot density, morphology and physical disturbance for faunal recruitment. *Marine Ecology Progress Series* 205:123-138.
- British Columbia/Washington Marine Science Panel. 1994. The shared marine waters of British Columbia and Washington: A scientific assessment of current status and future trends in resource abundance and environmental quality in the Strait of Juan de Fuca, Strait of Georgia and Puget Sound of BC State of Washington. p 71.
- Campbell, Colin (2010). Blue Carbon Report. Sierra Club BC.p.1.
- Dowty, P.B. Reeves, H. Berry, S. Wyllie-Echeverria, T. Mumford, A. Sewell, P. and Wright R. 2005. Puget Sound submerged vegetation monitoring project: 2003-2004 monitoring report. Nearshore Habitat Program, Aquatic Resources Division, Washington State Department of Natural Resources, Olympia, Washington.
- Duarte, C.M. 2000. Marine biodiversity and ecosystem services; an elusive link. *Journal of Experimental Marine Biology and Ecology*. 250:117-131.
- Durance, C. 2001. A review and assessment of eelgrass transplant projects in British Columbia. Document prepared for Fisheries and Oceans, South Coast Area. 37.
- Durance, C. 2002. Methods for mapping and monitoring eelgrass habitats in British Columbia. Funded by the Canadian Wildlife Service, Environment Canada.
- Harper, J. 2011. Coastal habitat mapping program fact sheet. Coastal & Ocean Resources Inc.
- Harrison, P.G. and Dunn, M. 1999. The Fraser delta sea grass ecosystems: importance to migratory birds and changes in distribution. In: unpublished manuscript. p. 3-4.
- IPCC. 2007. Climate change 2007: synthesis report. An assessment of the Intergovernmental Panel on Climate Change. Adopted at IPCC Plenary XXVII, Valencia, Spain, 12-17 November 2007, 52pp.

IPCC. 2012. Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

Islands Trust Fund Regional Conservation Plan (2011-2015). Prepared for the Islands Trust Fund Board, November, 2010 and endorsed by Islands Trust Council December 8, 2010.

Lamont, G. SNC Lavalin. 2013. Presentation to Conference on Science and Stewardship – Addressing Rising Sea Level Impacts on Coastal Communities, Brackendale, BC, 30 November 2013.

Levings, Colin; Jamieson, Glen. 1995. Marine and estuarine riparian habitats and their role in coastal ecosystems. Pacific Region. Canadian Science Advisory Secretariat.).

Levings, C.D. and Thom, R.M. 1994. Habitat changes in Georgia basin: implications for resource management and restoration in: Proceedings of the BC/Washington Symposium on the Marine Environment. January 13th -14th, 1994. R.C.H. Wilson, R.J. Beamish, F. Aitkens, j. Bell, eds. Can. Tech. Rep. Fish. Aqua. Sci. 1948: 330-349.

Lyngby, J.E. & Brix, H. 1989. Heavy metals in eelgrass (*Zostera marina*) during growth and decomposition. In: Hydrobiologist 176/177:189-196. Belgium.

MacArthur, R.H. and E.O. Wilson. 1967. The theory of island biogeography. Princeton University Press: Princeton, NJ.

McGlathery, K.J., J. Sundback, and I.C. Anderson. 2007. Eutrophication in shallow marine bays and lagoons; the role of plants in the coastal filter. Marine Ecology Progress Series 348:1-18.

Molnar, M., Kocian, M and Batker, D. Nearshore natural capital valuation. 2012. David Suzuki Foundation. p. 12.

Mumford, T.F. Jr. 2007. Kelp and eelgrass in Puget Sound. Prepared in support of the Puget Sound Nearshore Partnership. Washington Department of Natural Resources Aquatic Resources Division. Technical Report 2007-05.

Neckles, H.A. (ed.) 1994. Indicator development. Seagrass monitoring and research in the Gulf of Mexico. U.S.E.P.A.

Orth, R. J., T. J. B. Carruthers, W. C. Dennison, C. M. Duarte, J. W. Fourqurean, K. L.

Heck, A. R. Hughes, G. A. Kendrick, W. J. Kenworthy, S. Olyarnik, F. T. Short, M. 14 Waycott and S. L. Williams. 2006. A global crisis for seagrass ecosystems. *BioScience* 56:987-996.

- Orth, R. J, Heck, Jr. K. L, and Monterans J. van. 1984. Faunal communities in sea grass beds: A review of the influence of plant structure and prey characteristics on predator-prey relationships. *Estuaries* 7:339-350.
- Phillips, R.C. 1984. The ecology of eelgrass meadows in the Pacific northwest: A community profile. SCH. Nat. and Mathematical Sciences, Seattle Pacific University. Fish and Wildlife Service, U.S. Dept. of the Interior.
- Short, F.T., and Wyllie-Echeverria, S. 1996. Natural and human induced disturbance of seagrasses. *Environmental Conservation* 23.
- Short, F., Carruthers T., Dennison W., Waycott M. 2007. Global seagrass distribution and diversity: A bioregional model CA Department of Natural Resources, University of New Hampshire, Jackson Estuarine Laboratory, Durham, NH 03824, USA
- Thom, R., Borde, A.B., Williams, G.D., Southard, J.A., Blanto, S.L. & Woodruff, D.L. 2001. Effects of multiple stressors on eelgrass restoration projects: Proceedings of Puget Sound/Georgia Strait Conference. p.5.
- Thom, R., Diefenderfer, M., Vavrinec, J., Borde, A. 2011. Restoring resiliency: Case studies for Pacific Northwest estuarine eelgrass (*Zostera marina* L.) ecosystems.
- Thompson, R.E. 1994. Physical oceanography of the Strait of Georgia-Puget Sound-Juan de Fuca system. Symposium on the Marine Environment, Institute of Ocean Sciences, Sidney, B.C. p.36.
- Titus, J.G. and E.M. Strange. (eds.), 2008. Background Documents Supporting Climate Change Science Program Synthesis and Assessment. Product 4.1: Coastal Elevations and Sensitivity to Sea Level Rise, EPA 430R07004. U.S. EPA, Washington, DC.
- Van der Slagt, G., Harlow, G., and Verge, M. (Coordinators) 2003. Coastal shore stewardship: A guide for planners, builders and developers on Canada's pacific coast. The Stewardship Series. Stewardship Centre for BC. www.stewardshipcentre.bc.ca
- Waycott, M., C. M. Duarte, T. J. B. Carruthers, R. J. Orth, W. C. Dennison, S. Olyarnik, A. Calladine, J. W. Fourqurean, K. L. Heck, A. R. Hughes, G. A. Kendrick, W. J. Kenworthy, F. T. Short, and S. L. Williams. 2009. Accelerating loss of seagrasses across the globe threatens coastal ecosystems. *Proceedings of the National Academy of Science* 106:19761- 19764.
- Waycott and S. L. Williams. 2006. A global crisis for seagrass ecosystems. *BioScience* 56:987-996.
- Wilson, E.O., and E.O. Willis. 1975. Applied biogeography in M.L. Cody and J.M. Diamond, editors. *Ecology and evolution of communities*. Harvard University Press, Cambridge, Massachusetts.

Appendix A

Mapping Methodology

2012 - 2013

2012 Methodology for *Zostera marina* Presence and Absence Mapping With a Towed Underwater Camera

The following methodology for eelgrass mapping (*Zostera marina*) was used to determine the location (presence/absence) of eelgrass habitats for Thetis, North and South Pender, Mayne, Lasqueti and Gambier Islands in 2012 under contract with the Islands Trust Fund.

The methodology reported here is an addendum to “Methods for Mapping and Monitoring Eelgrass Habitat in British Columbia” (“Methods”) authored by Precision Identification Biological Consultants and peer reviewed by experts in the field. This addendum was created by the Seagrass Conservation Working Group with input and review by Precision Identification.

The purpose of presence and absence mapping methodology is to determine the linear extent of eelgrass along the coastline. This is achieved by deploying an underwater camera that is towed by a boat and recording the geographic location of eelgrass beds using a hand held GPS. The resulting representation of eelgrass beds are lines.

General habitat characteristics outlined in Methods are also recorded: Form (flat/fringing), Distribution (continuous/patchy), Percent Cover (<25%, 26-75%, >75%), and Substrate type (sand/mud/pebble/cobble/boulder). The state of the tide was recorded as “slack” or “running” in order to indicate the level of confidence in the percent cover estimate. A slack tide yields a higher level of confidence than a running tide, which causes the eelgrass lay across the ocean floor.

Eelgrass ShoreZone bioband mapping and marine charts were used to determine potential locations of eelgrass beds. The majority of the eelgrass beds in the Southern Salish Sea include habitat between 1 and 3 m chart datum. This depth contour was followed and eelgrass presence within this depth range was recorded. If eelgrass was not found in this depth range where bathymetry and substrate characteristics were suitable for eelgrass growth, a perpendicular transect was followed ranging from +1m to -6m which is the typical range of eelgrass in the Salish Sea.

GPS waypoints and the following parameters were recorded at roughly 10m intervals: depth, eelgrass presence, form, distribution, substrate, percent cover, tide state, presence of broad or tuft algae, visibility.

Where marine charts indicated suitable conditions (a shallow bathymetric relief) for eelgrass but eelgrass was not present, waypoints and substrate type were recorded at 20m intervals. Where marine charts indicated unsuitable conditions for eelgrass (steep bathymetric relief), only waypoints were recorded to indicate mapping coverage.

2013 Methodology for *Zostera marina* Presence Mapping with a Towed Underwater Camera

For the 2013 contract, the following methodology for eelgrass mapping (*Zostera marina*) was used to determine the location (presence) of eelgrass habitats for the Gabriola Island Local Trust Area, the Galiano Island Local Trust Area, Valdes Island, Ballenas – Winchelsea (Executive Islands) Local Trust Area, Cufra Inlet (Thetis Island) and the Gambier Associated Islands found within Howe Sound (excluding the Thormanbys and other islands off of the Sunshine Coast).

The methodology reported here is an addendum to “Methods for Mapping and Monitoring Eelgrass Habitat in British Columbia” (“Methods”) authored by Precision Identification Biological Consultants and peer reviewed by experts in the field. This addendum was created by the Seagrass Conservation Working Group with input and review by Precision Identification. For 2013 mapping Islands Trust Global Positioning System Specifications (Schedule G to the Islands Trust contract) were adopted except for Cufra Inlet on Thetis Island where a hand held GPS was used to be consistent with 2012 mapping. Average accuracy was 0.814m and was the combined result of the built-in accuracy of the GPS unit, lag time between sighting eelgrass and the unit gathering enough satellite data to create a waypoint, in combination with boat drift.

Linear Mapping

With the exception of the islands in Metro Vancouver, the Islands Trust eelgrass mapping was done using a linear method to determine presence of eelgrass along the shoreline. This linear eelgrass mapping is achieved by towing an underwater camera using a boat, except for the mapping done in Cufra Inlet in 2013, where the water was shallow enough to observe eelgrass from kayaks, and by concurrently recording the geographic location of eelgrass beds using a GPS. The resulting representations of eelgrass beds are lines and points (where the eelgrass patch was less than 3m in length).

Polygon Mapping

With financial assistance from Metro Vancouver, eelgrass beds on Bowen, Bowyer and Passage Islands were mapped using polygons to show their full extent. In addition to the linear mapping described above, underwater camera transects were conducted perpendicular to shore to map shoreward and seaward edges. In some areas, fringing eelgrass and eelgrass patches were too small to map as polygons. In these locations lines and points were used respectively to show eelgrass presence. Fringing eelgrass bands $\leq 5\text{m}$ wide were mapped as lines and patches less than 10m^2 were mapped as points. Mapping of polygons according to standard methodology was limited due to safe boat operation in wind, current and tidal movements, as well as navigation around boats and swimmers.

For all the islands, general habitat characteristics outlined in Methods are also recorded: Form (flat/fringing), Distribution (continuous/patchy), Percent Cover (<25%, 26-75%, >75%), and Substrate type (sand/mud/pebble/cobble). The state of the tide was recorded as “slack” or “running” in order to indicate the level of confidence in the percent cover estimate. A slack tide

yields a higher level of confidence than a running tide, which causes the eelgrass to lie across the ocean floor.

ShoreZone eelgrass bioband mapping and marine charts were used to determine potential locations of eelgrass beds. The majority of the eelgrass beds in the Southern Salish Sea are found between 1 and 3m chart datum. This depth contour was followed and eelgrass presence within this depth range was recorded. If eelgrass was not found in this depth range where bathymetry and substrate characteristics were suitable for eelgrass growth, a perpendicular transect was followed ranging from +1m to -6m which is the typical range of eelgrass in the Salish Sea.

GPS waypoints and the following parameters were recorded at roughly 10m intervals with intervals no longer than 20m: depth, eelgrass presence, form, distribution, substrate, percent cover, tide state, presence of broad or tuft algae, visibility.

The following section was removed from the methodology for 2013:

Where marine charts indicated suitable conditions (a shallow bathymetric relief) for eelgrass but eelgrass was not present, waypoints and substrate type were recorded at 20 metre intervals. Where marine charts indicated unsuitable conditions for eelgrass (steep bathymetric relief), only waypoints were recorded to indicate mapping coverage.

Appendix B

Maps of Shoreline Units

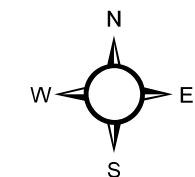
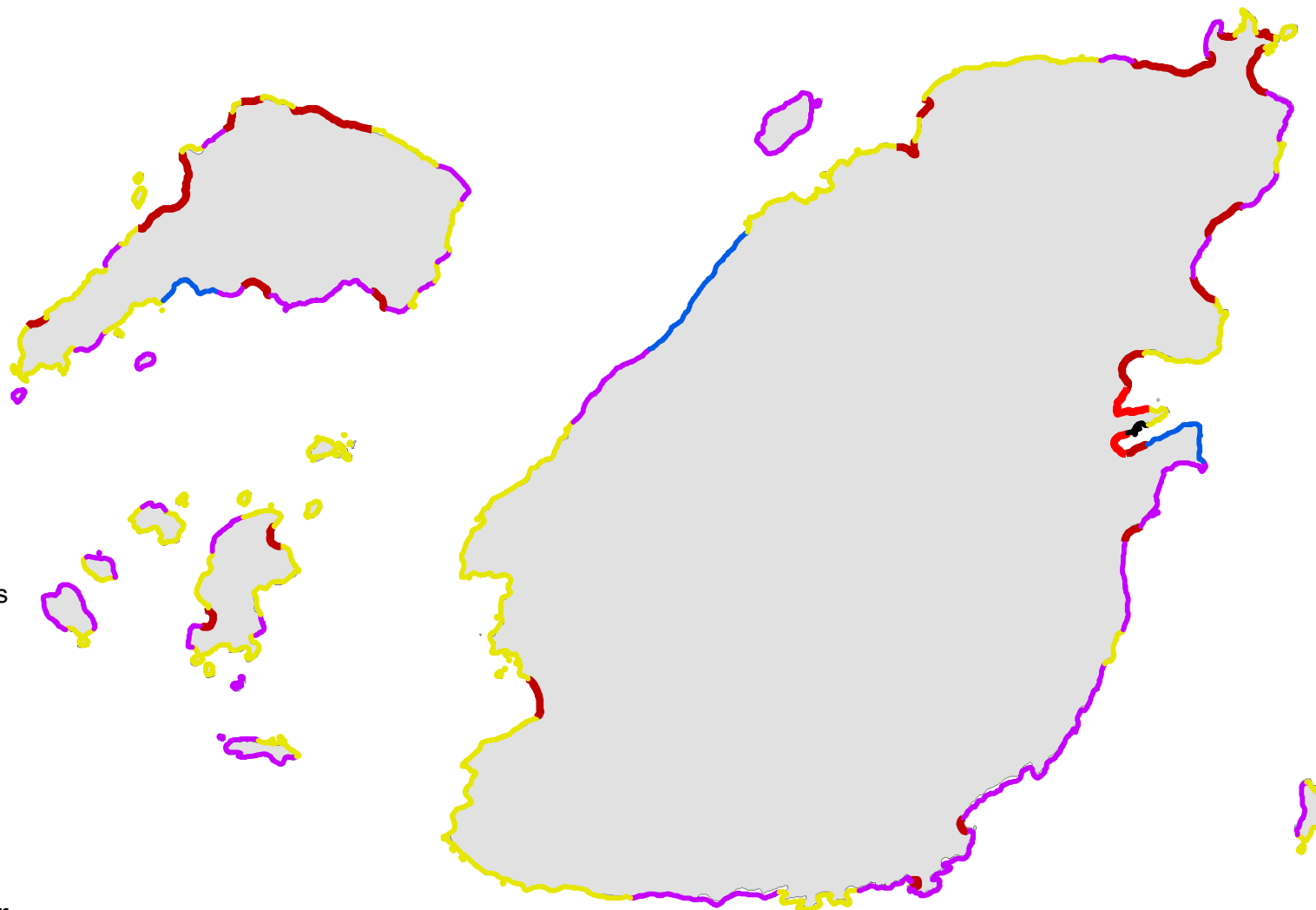
Shoreline Units & Zostera Bioband Units -- Bowen Island --

Produced By: Galiano Conservancy Association

Data Source: Provincial Shorezone Database

Map Date: June 2013

Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

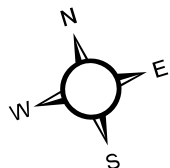
SHORELINE_UNITS

-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:70,000

Shoreline Units & Zostera Bioband Units -- Denman Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2013
Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

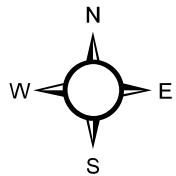
SHORELINE_UNITS

-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:70,000

Shoreline Units & Zostera Bioband Units -- Executive Islands --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2013
Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

SHORELINE_UNITS

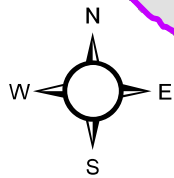
-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:46,362

55

Shoreline Units & Zostera Bioband Units -- Gabriola Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2012
Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

SHORELINE_UNITS

-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:57,500

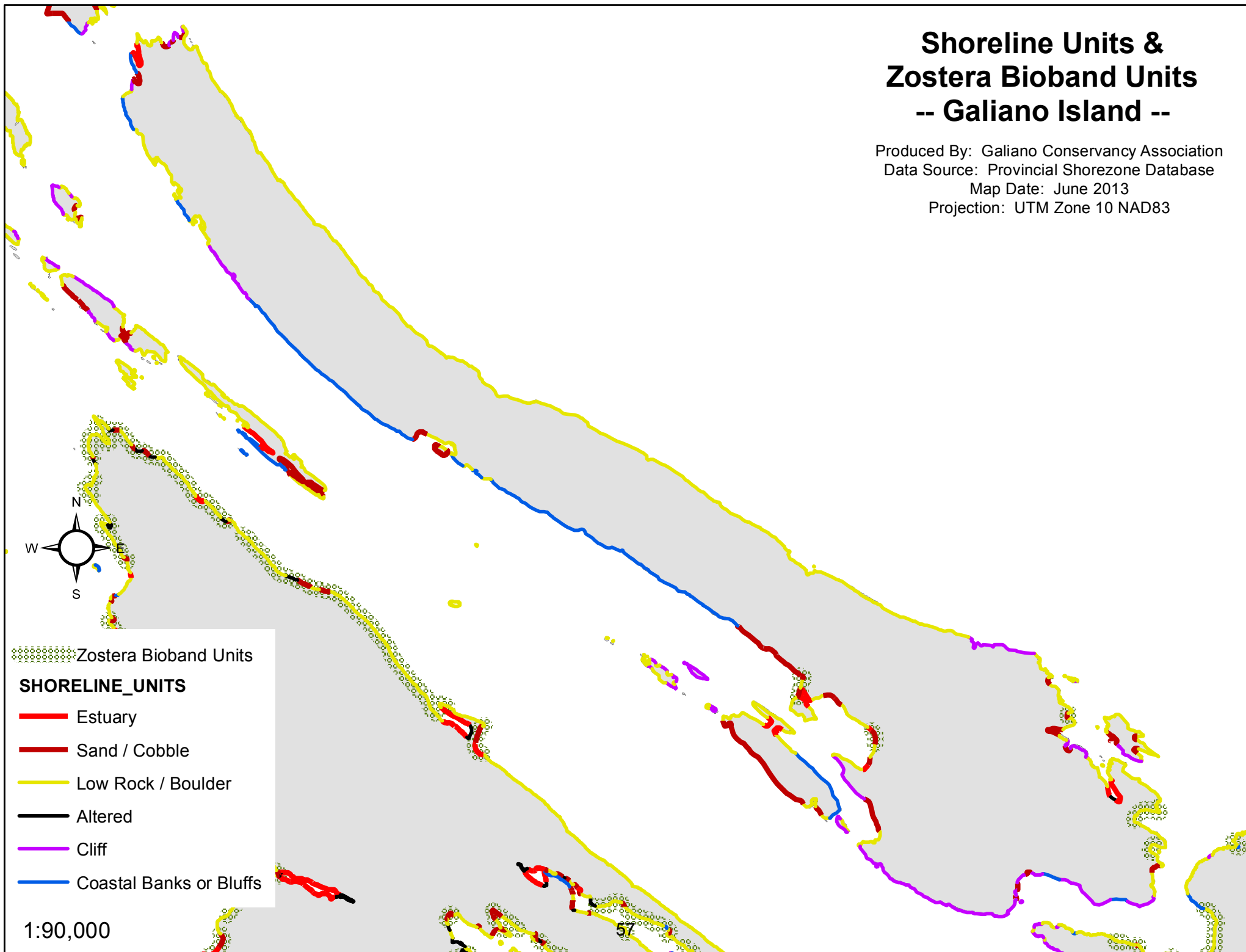
Shoreline Units & Zostera Bioband Units -- Galiano Island --

Produced By: Galiano Conservancy Association

Data Source: Provincial Shorezone Database

Map Date: June 2013

Projection: UTM Zone 10 NAD83



Shoreline Units

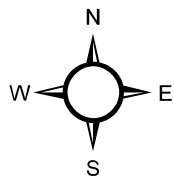
-- Gambier Island --

Produced By: Galiano Conservancy Association

Data Source: Provincial Shorezone Database

Map Date: June 2012

Projection: UTM Zone 10 NAD83

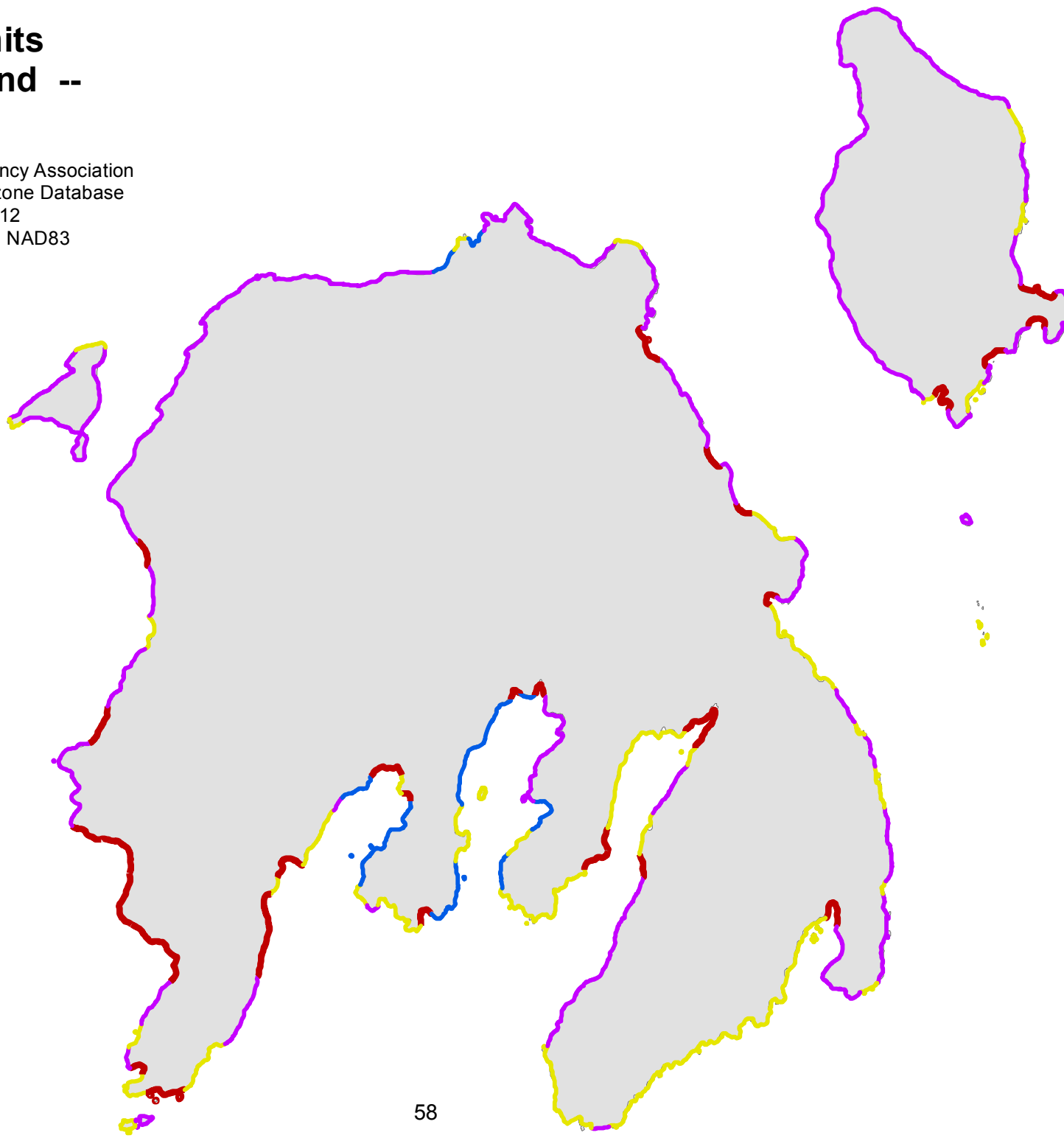


SHORELINE_UNITS

- Estuary
- Sand / Cobble
- Low Rock / Boulder
- Altered
- Cliff
- Coastal Banks or Bluffs

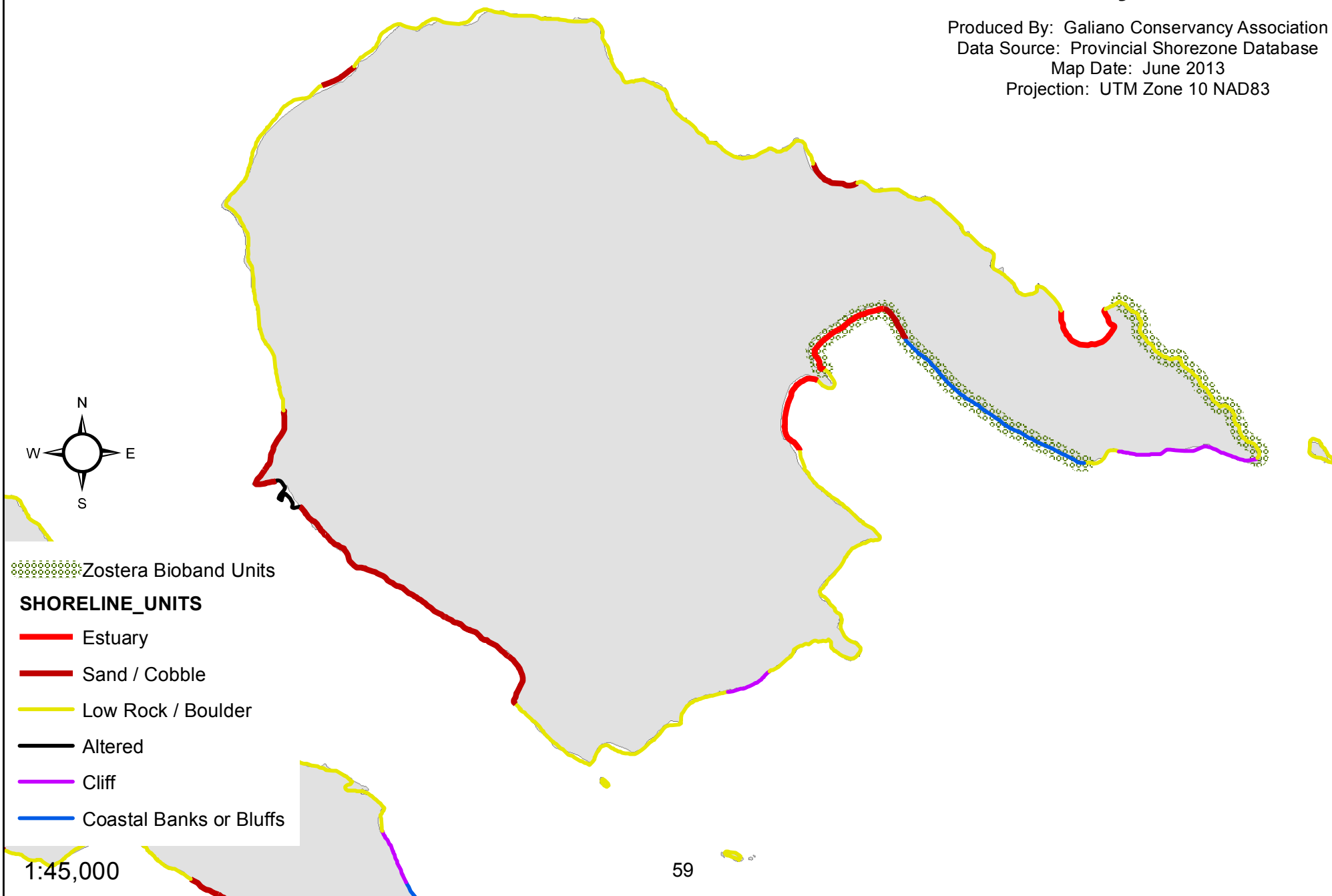
1:70,000

58



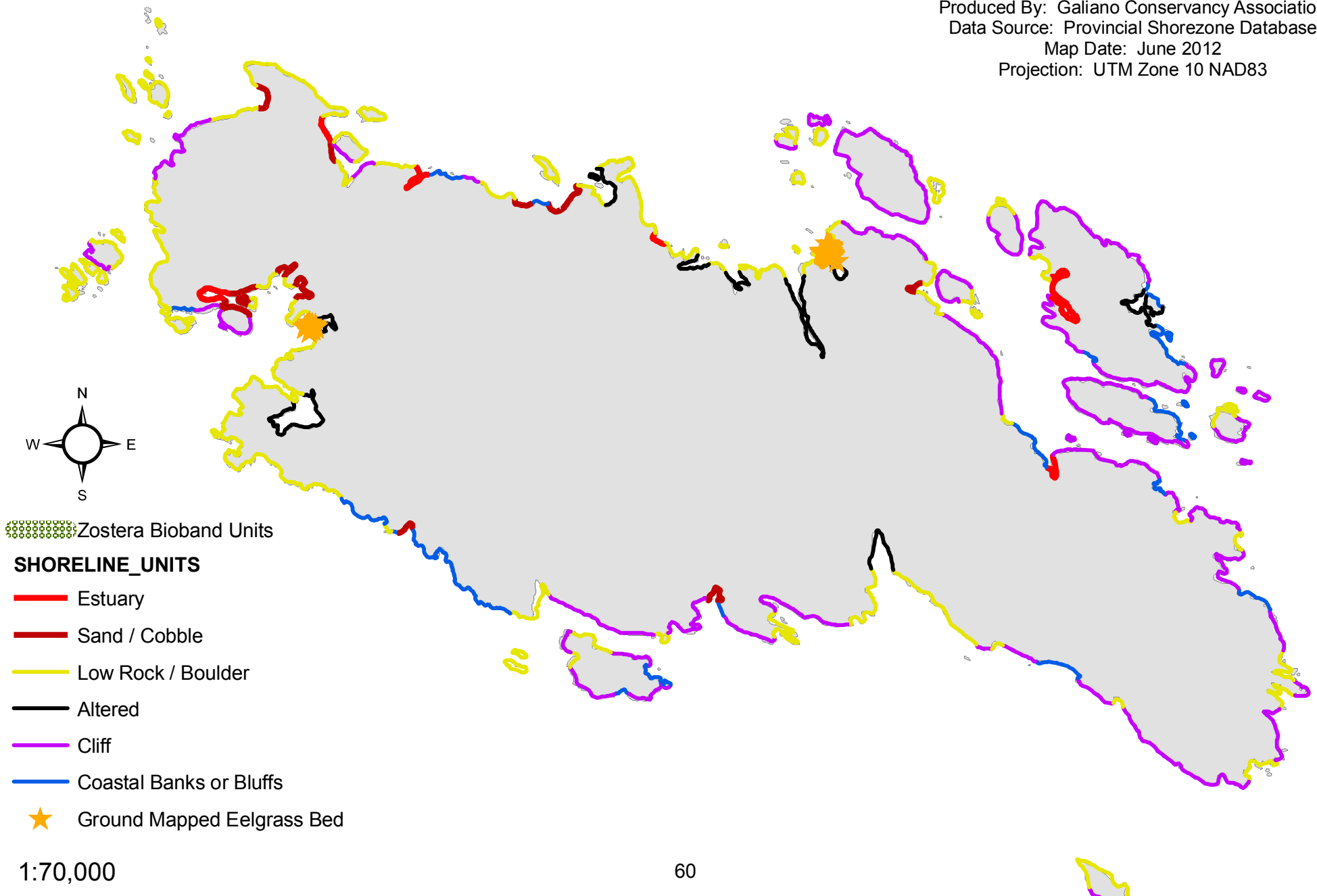
Shoreline Units & Zostera Bioband Units -- Hornby Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2013
Projection: UTM Zone 10 NAD83



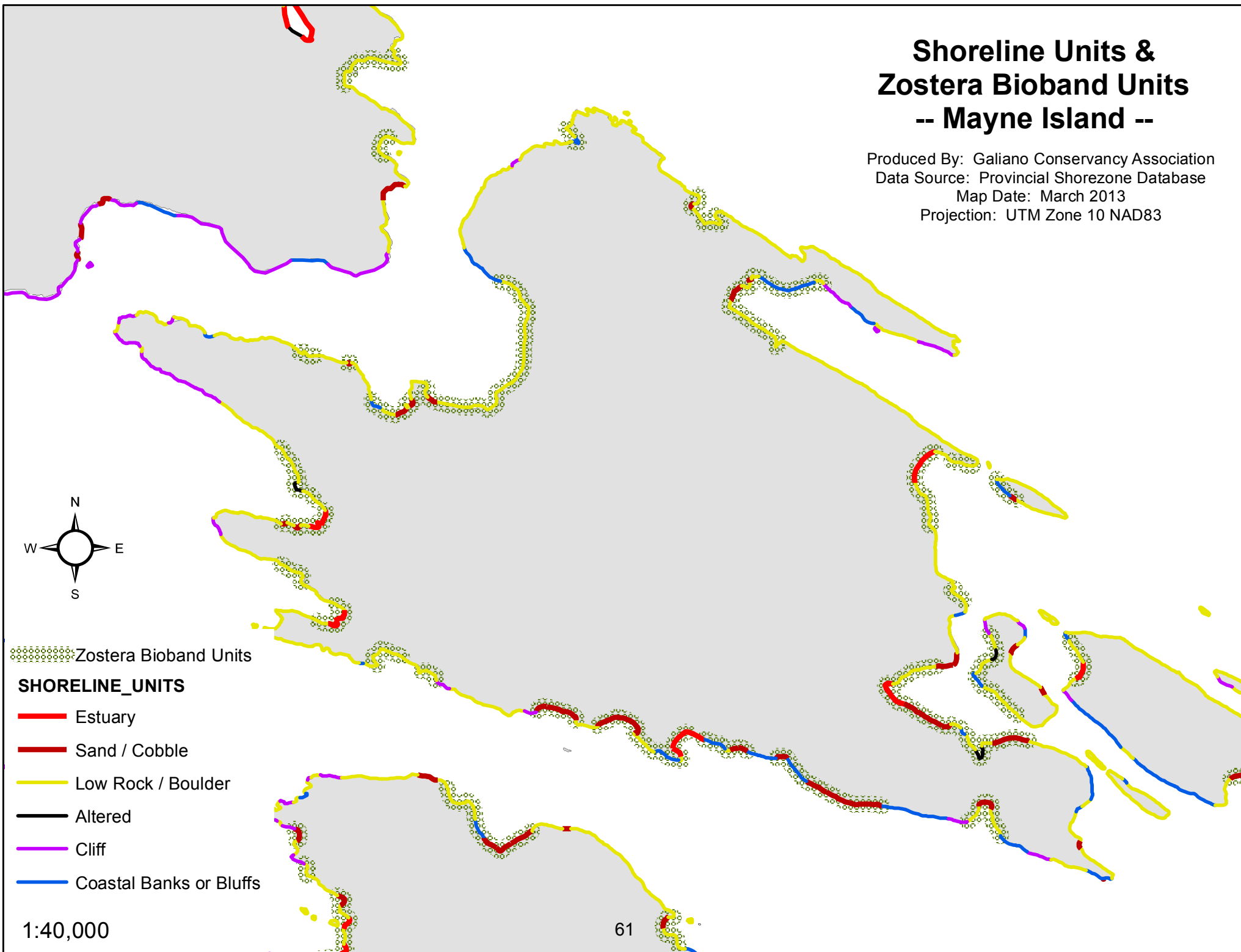
Shoreline Units & Zostera Bioband Units -- Lasqueti Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2012
Projection: UTM Zone 10 NAD83



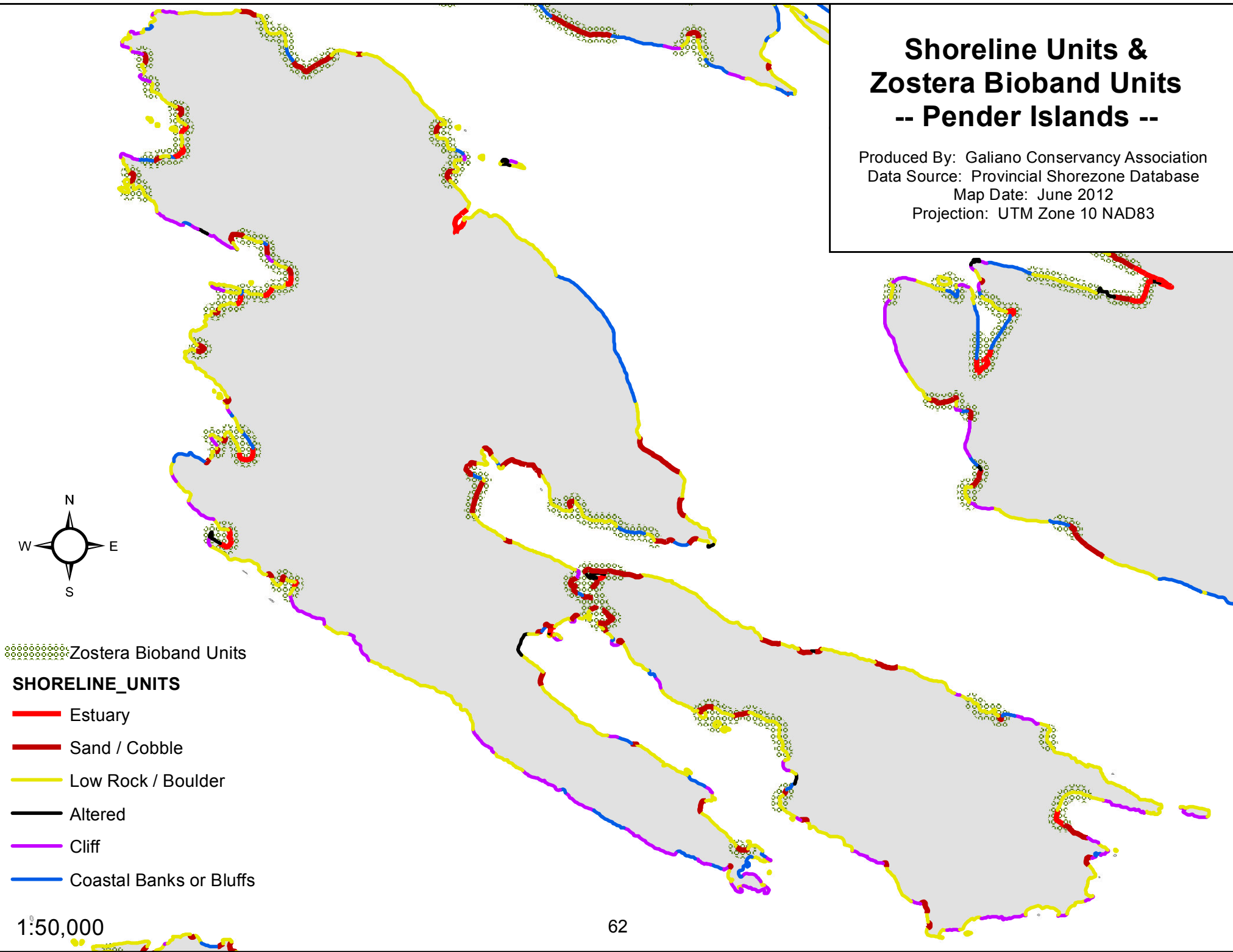
Shoreline Units & Zostera Bioband Units -- Mayne Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: March 2013
Projection: UTM Zone 10 NAD83



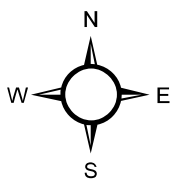
Shoreline Units & Zostera Bioband Units -- Pender Islands --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2012
Projection: UTM Zone 10 NAD83



Shoreline Units & Zostera Bioband Units -- Thetis Island Trust Area --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2012
Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

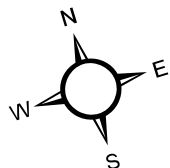
SHORELINE_UNITS

-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:55,000

Shoreline Units & Zostera Bioband Units -- Valdez Island --

Produced By: Galiano Conservancy Association
Data Source: Provincial Shorezone Database
Map Date: June 2013
Projection: UTM Zone 10 NAD83



 Zostera Bioband Units

SHORELINE_UNITS

-  Estuary
-  Sand / Cobble
-  Low Rock / Boulder
-  Altered
-  Cliff
-  Coastal Banks or Bluffs

1:61,321

Appendix C

Summary of Overwater Structures

The Impacts of Overwater Structures on the Marine Nearshore Environment



The following information was taken from two sources. A Green Shores document summarizes possible effects of docks.¹ A White Paper published in 2001² for the Washington State Transportation Commission in Puget Sound is more detailed. The page numbers at the end of paragraphs indicate the page on which the information was found in the original document.

Information collated by Nikki Wright, Executive Director

SeaChange Marine Conservation Society

¹ Province of British Columbia. *Coastal Shore Stewardship: A Guide for Planners, Builders and Developers on Canada's Pacific Coast*. www.greenshores.ca

² Nightingale, B. & Simenstad, C.A. (2001) *Overwater Structures: Marine Issues White Paper Research Project T 1803, Task 35*. Prepared for Washington State Transportation Commission and in cooperation with U.S. Department of Transportation, Federal Highway Administration. 108 pages.

Summary of Possible Effects of Docks

Coastal Shore Stewardship: A Guide for Planners, Builders and Developers on Canada's Pacific Coast Province of British Columbia (Available on the Green Shores Web site: www.greenshores.ca)

What Can Happen (p. 65)

The installation of docks can affect the coastal biophysical environment in a variety of ways:

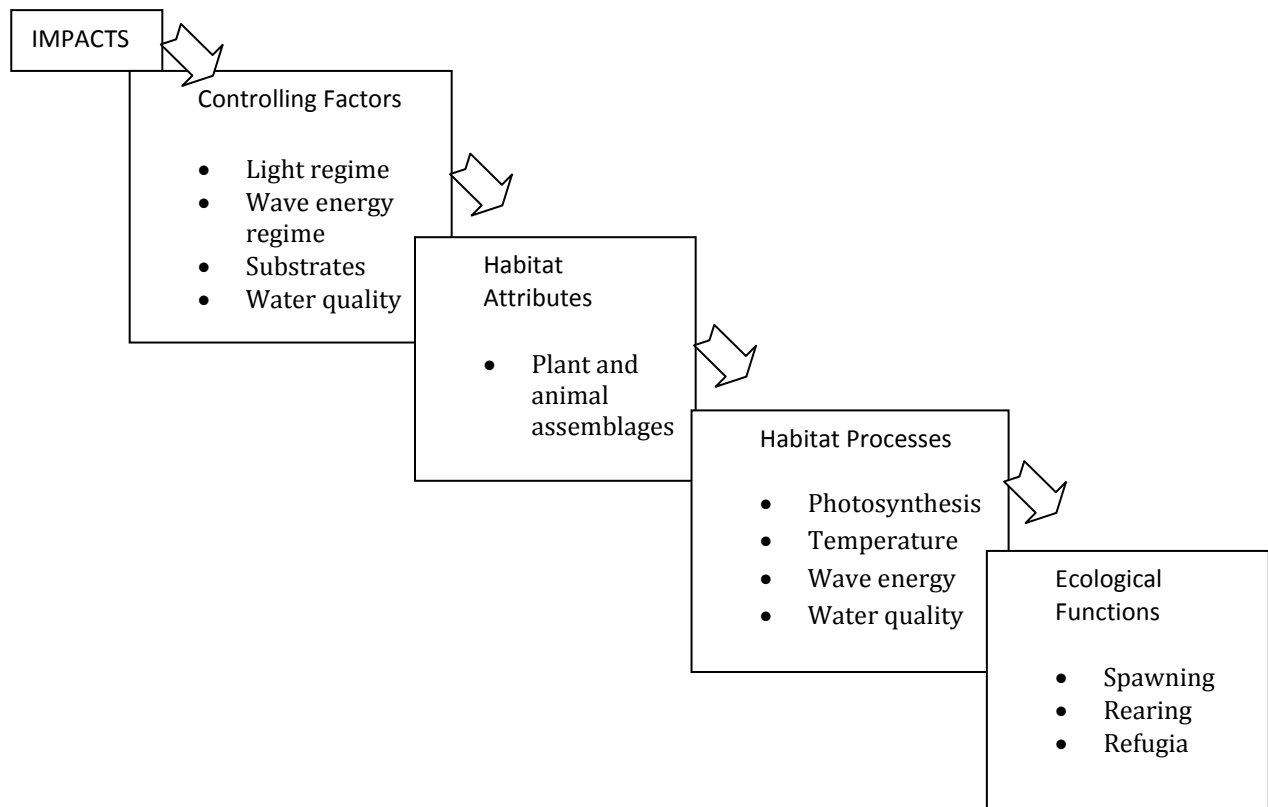
- Shading: Shading caused by the dock can affect the vigor of intertidal and subtidal plant communities, such as marsh plants, eelgrass and kelp beds. These impacts may be chronic (reduced productivity) or acute (wiping out plant communities, leaving the area barren).
 - Disruption of shore drift patterns: This can result in updrift beach formation and downdrift shoreline erosion.
 - Shore damage: Removal of shore plants and disturbance of soils where docks are attached to land can increase erosion and sedimentation of the intertidal and adjacent subtidal areas.
 - Bottom habitat: Installation of footings, pilings and other structures permanently alienates benthic habitat. Dredging to create sufficient depth next to the dock can also disrupt or destroy bottom habitat.
 - Operational pollution: poor refueling and dock maintenance practices, bilge releases and accidental spills from boats and docks can release contaminants into the nearby waters.
- (p. 65)

Overview of Ecological and Habitat Issues

From: Overwater Structures: Marine Issues White Paper Research Project T 1803, Task 35.

Estuarine and shallow marine nearshore habitats provide passage for fish and fish larvae, ocean water and human transportation, as well as areas for settlement of marine shellfish and other marine life. These sites are important sources of prey resource production, refugia, and spawning areas for Pacific salmon, groundfish, and forage fish, such as herring, sand lance and surf smelt. Overwater constructed structures can pose alterations to key factors that control prey production and spawning. Light, wave energy and substrate regimes determine the habitat characteristics that support these critical functions (p. 1).

Overwater structures are typically located in intertidal areas from above the area submerged by the mean higher high tides and out to 15 meters below the area exposed by the mean lower low tide. The primary physical processes controlling habitat attributes (i.e. plant and animal assemblages) and functions are depth (elevation) substrate type, wave energy, and light and water quality. These are the most important factors influencing the development and distribution of nearshore habitats (p. 33).



Conceptual model used by authors to define overwater structure impacts to nearshore habitat (p. 33).

Overwater structures and associated activities can impact the ecological functions of habitat through the alteration of habitat controlling factors (light regime, wave energy regime, and

substrate and water quality). These alterations can, in turn, interfere with habitat processes supporting the key ecological functions of spawning, rearing and refugia. Whether any of these impacts occur and to what degree they occur at any one site depend upon the nature of site-specific habitat controlling factors and the type, characteristic, and use patterns of a given overwater structure located at a specific site (p. 34).

In addition to impacts associated with overwater constructed structures, activities associated with docks can also pose risks to the quality and quantity of habitat through prop scour, groundings, contaminant introduction to the marine environment and structural interferences with shallow nearshore habitats with the placement of ramps and haul-outs in nearshore areas.

Habitat Impact Mechanisms (p. 34)

Habitat Controlling Factors	Overwater Structures & Activities	Habitat Impact Mechanisms	Habitat Impacts
Light Regime	• Docks • Floats • Pilings • Moored vessels	• Reduced light levels	• Limited plant growth & recruitment • Altered animal behavior and assemblages
Wave Energy Regime	• Floats • Breakwaters • Prop wash • Marina	• Altered wave patterns	• Altered plant and animal assemblages • Altered substrate type • Altered sediment transport & distribution
Substrate	• Prop & anchor scour • Pilings, breakwaters & floats	• Altered substrate characteristics	• Altered sediment transport & distribution • Altered substrate type • Altered plant & animal assemblages
Water Quality	• Discharges • Boat & upland run-off	• Increased exotics, toxics, nutrients and bacterial introductions	• Altered plant & animal assemblages • Limited growth & recruitment • Exotic species replacement of natives

Overwater Structure Effects on Light Regime

Effects on Underwater Vegetation

Without proper precautions, docks, piers, and pilings can cast shade upon the underwater water environment thereby limiting light availability for plant photosynthesis. Distributions of invertebrates, fishes, and plants have been found to be severely limited in under-dock environments when compared to adjacent vegetated habitat in the Pacific Northwest not shaded by overwater structures (p. 38).

Each dock defines a shade footprint specific to its structural specifications. Dock height, width, construction materials, and the dock's orientation to the arc of the sun are primary factors in determining the shade footprint that a given dock casts over the submerged substrates. Researchers found underwater light availability and eelgrass bed quality under docks to be primarily dependent upon dock height, followed in importance by dock width and dock orientation to the arc of the sun. Light is the most important variable affecting canopy structure (i.e. shoot density and height) and eelgrass bed quality. To the degree that a shade footprint limits plant photosynthesis, it decreases the extent and quality of habitat that support a wide variety of fish and shellfish populations. Construction of even partially shading types of structures, floating or on pilings, could be expected to largely eliminate existing eelgrass and other macroflora with little chance for replacement plant growth (p. 39).

Effects on Fish

Overwater structures can create sharp underwater light contrasts by casting shade in ambient daylight conditions. They can also produce sharp underwater light contrasts by casting artificial light in ambient nighttime conditions. Changes to ambient underwater light environments pose a risk of altering fish migration behavior and increasing mortality risks. Findings have demonstrated that fish responses to piers are ambiguous with some individuals passing under the dock, some pausing and going around the dock, schools breaking up upon encountering docks, and some pausing and eventually going under the dock (p. 43).

Light is considered to be the primary factor limiting the survival and distribution of eelgrass. Given the strong association of important fish prey resources with eelgrass, limitations in the extent of eelgrass pose a potential risk of reduced prey resources. Prey resource limitations likely impact migration patterns and the survival of many juvenile fish species. For smaller fish less than 50 mm in length, residence times along particular shorelines are thought to be a function of prey abundance. Research in the Hood Canal demonstrated that outmigrating juvenile chum fry (30-45 mm) feed extensively upon small, densely distributed harpacticoid copepods selecting for the largest copepods available. As the fish grew in size, their diet content became composed more of larger epibenthos and pelagic crustaceans. Consistent with other studies, the highest densities of harpacticoid copepods occurred in magnitudes 4-5 times higher in eelgrass stands than in sand

habitat without eelgrass. Similarly, the largest abundance of first post-larval stage crabs of 0+ age are found in eelgrass beds (p. 45).

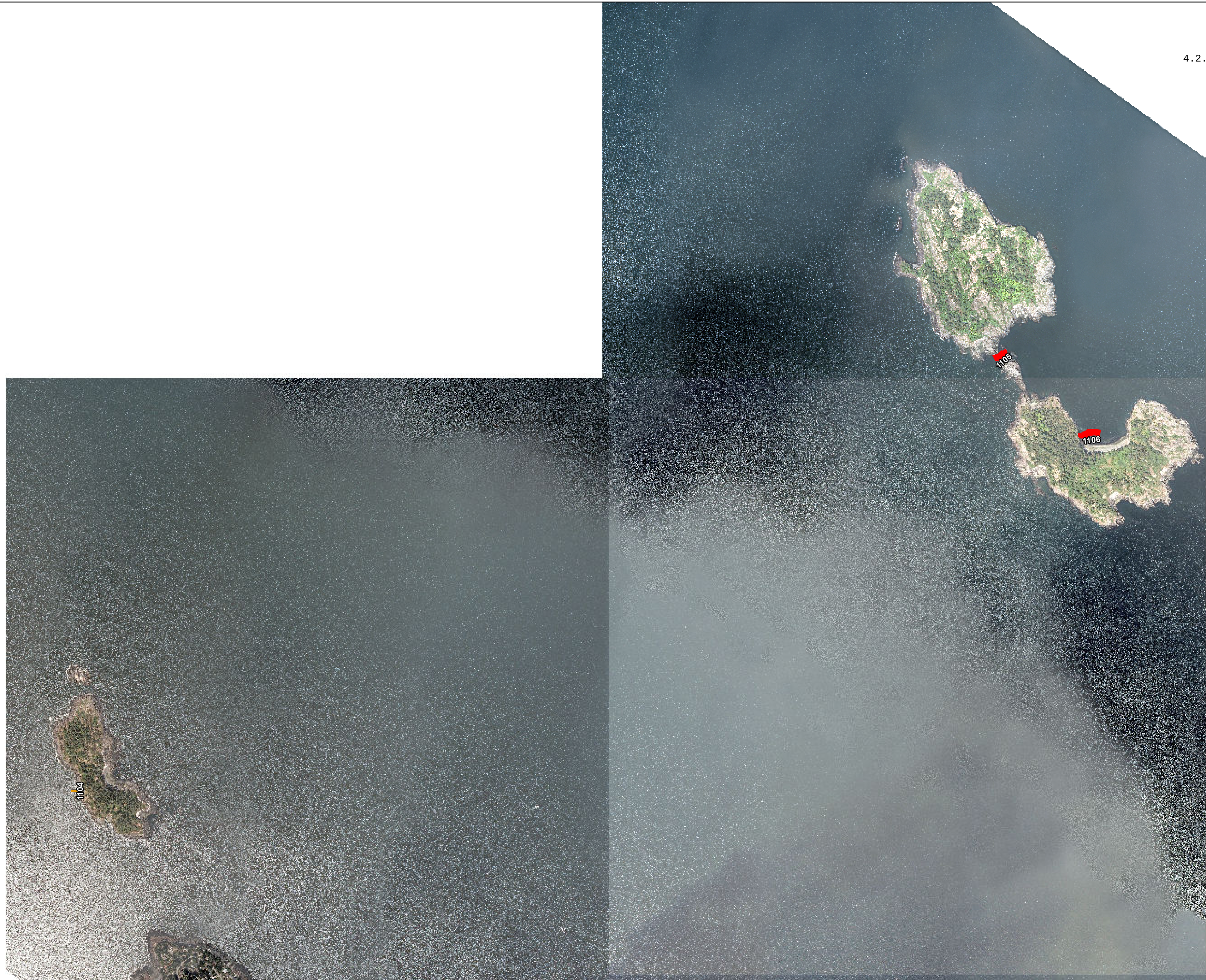
Impacts on Wave Energy

Wave energy and water transport alterations imposed by docks, bulkheads, breakwaters, ramps and associated activities alter the size, distribution, and abundance of substrate and detrital materials required to maintain the nearshore detrital-based food web. Alteration of sediment transport patterns can present potential barriers to the natural processes that build spits and beaches and provide substrates required for plant propagation, fish and shellfish settlement and rearing, and forage fish spawning. Although the specific characteristics of the factors at play vary with the geology of each region or subsystem, changing the type and distribution of sediment will likely alter key plant and animal assemblages. Wave and current interactions in shallow water (i.e. depths <1.0m) are particularly important to intertidal flora and fauna (p. 48).

Dock pilings have also been found to alter adjacent substrates with increased shell hash deposition from piling communities and changes to substrate bathymetry. Similarly, dock uses and construction activities are known to limit underwater light and redistribute sediments through prop scouring, vessel shading, and pile driving. These changes in substrate type can change the nature of the flora and fauna native to a given site. In the case of pilings, native dominant communities typically associated with sand, gravel, mud, sand, and seagrass substrates are replaced by those communities associated with shell hash substrates (p. 49).

Cumulative Effects

Given the apparent increasing demand for overwater structures, structural design to allow maximum light transmission and to mitigate energy and substrate changes is required to protect the ecosystems marine fishes rely upon. Given what is known concerning overwater structure impacts in marine and estuarine ecosystems, we conclude that multiple placements of overwater structures in marine waters can pose substantive risks of significant changes to the immediate and surrounding marine and estuarine ecosystems. These risks require the assessment of existing cumulative light limitation effects and wave energy and substrate effects to the shoreline environment. These risks require assessment at the drift cell before considering the addition of new structures (p. 91).



4.2.3

MAP 8: Eelgrass Presence Ballenas - Winchelsea (Executive Islands) Local Trust Area

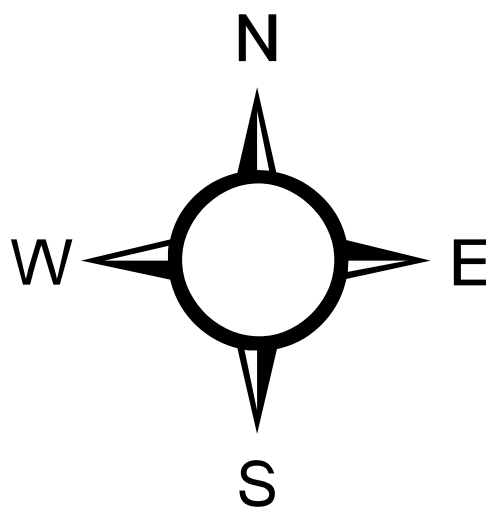
- Eelgrass Bed: Flat, Continuous
- Eelgrass Bed: Flat, Patchy
- Eelgrass Bed: Fringing, Continuous
- Eelgrass Bed: Fringing, Patchy

The eelgrass inventory was completed by SeaChange Marine Conservation Society under contract by Islands Trust Fund and the Islands Trust. The inventory was conducted from July to November, 2013 using a towed underwater camera and Trimble Pathfinder Pro XR GPS.

0 500 1,000 Meters

Each line segment is labeled with its unique ID number. This number corresponds with the ID column in the associated data table.

Produced by: Galiano Conservancy Association
Map Date: December 12th, 2013
Orthophoto Date: 2011 Scale: 1 : 12,000
Map Projection: UTM Zone 10N, NAD83





Islands Trust

Top Priorities

"Executive Area" Islands

No.	Description	Activity	Received/Initiated	Responsibility	Target Date	Status
1	Development of an Official Community Plan and Land Use Bylaw	Obtain additional resources and expertise to support LTC interaction with First Nations	Oct-23-2007	Sonja Zupanec		On Going
2	Amendment of the Meeting Procedures Bylaw No. 24, to include electronic meeting participation.		Feb-25-2013	Sonja Zupanec	Oct-25-2013	On Going
3	Consider adopting relevant administrative bylaws following adoption of OCP and LUB		Jul-26-2011	Sonja Zupanec		On Going



Islands Trust

Print Date: Feb-13-2014

Projects

"Executive Area" Islands

No.	Description	Activity	Received/Initiated	Status
1	Explore opportunities to build a relationship with Nanoose First Nation.		Oct-09-2013	On Going

Islands Trust

LTC EXP SUMMARY REPORT F2014
Invoices posted to Month ending October 2013

610 Executive	Invoices posted to Month ending October 2013	Budget	Spent	Balance
LTC Local				
65230-610	LTC - Local Exp - Special Projects	2,000.00	0.00	2,000.00
TOTAL LTC Local Expense		2,000.00	0.00	2,000.00
Projects				
TOTAL Project Expenses		0.00	0.00	0.00

Islands Trust

LTC EXP SUMMARY REPORT F2014

Invoices posted to Month ending November 2013

610 Executive	Invoices posted to Month ending November 2013	Budget	Spent	Balance
LTC Local				
65230-610	LTC - Local Exp - Special Projects	2,000.00	40.00	1,960.00
TOTAL LTC Local Expense		<u>2,000.00</u>	<u>40.00</u>	<u>1,960.00</u>
Projects				
TOTAL Project Expenses		<u>0.00</u>	<u>0.00</u>	<u>0.00</u>

Islands Trust
LTC EXP SUMMARY REPORT F2014
Invoices posted to Month ending December 2013

6.2.3

610 Executive	Invoices posted to Month ending December 2013	Budget	Spent	Balance
LTC Local				
65230-610	LTC - Local Exp - Special Projects	2,000.00	60.00	1,940.00
TOTAL LTC Local Expense		2,000.00	60.00	1,940.00
Projects				
TOTAL Project Expenses		0.00	0.00	0.00

Islands Trust
 LTC EXP SUMMARY REPORT F2014
 Invoices posted to Month ending January 2014

6 . 2 . 4

610 Executive	Invoices posted to Month ending January 2014	Budget	Spent	Balance
LTC Local				
65230-610	LTC - Local Exp - Special Projects	2,000.00	206.20	1,793.80
TOTAL LTC Local Expense		<u>2,000.00</u>	<u>206.20</u>	<u>1,793.80</u>
Projects				
73001-610-2013	Ballenas Winchelsea OCP/LUB	0.00	962.10	-962.10
TOTAL Project Expenses		<u>0.00</u>	<u>962.10</u>	<u>-962.10</u>



STAFF REPORT

Date: February 4, 2014

File No.: 6500-0020

To: Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**)
for the meeting of February 24, 2014

From: Sonja Zupanec, Island Planner

Copy: Courtney Simpson, Regional Planning Manager

Re: Proposed Bylaws No. 27 & 28 – Ballenas-Winchelsea Islands OCP and LUB

SUPPLEMENTAL REPORT

The purpose of this report is to review: 1) an alternative definition for short term accommodation pertaining to the proposed Conservation (CN) Zone; 2) review and consider minor corrections in Proposed Bylaws 27 and 28 prior to holding a public hearing before March 31, 2014 for both proposed bylaws.

REVISIONS TO THE OCP:

At the January 16th 2014 special meeting, the LTC gave second reading as revised to Proposed Bylaw 27, incorporating the Archeology Branch information note to section 3.10.

Subdivision Potential:

At that meeting the LTC heard from the agent for the owner of the privately owned lot on West Ballenas Island that he wishes to retain subdivision potential of 10 acre minimum lot sizes. Staff is not recommending an increase to the current OCP density provisions of one dwelling per 10 acres or the minimum /average lot sizes for potential subdivision. The potential land use and ecological implications of subdivision into fee simple parcels and increases in density are best evaluated on a case by case basis through a comprehensive rezoning application that addresses the islands' carrying capacity; access points and impacts of development on the island.

Text Change:

Since the LTC has requested further information on an amended definition of short term accommodation, staff took this opportunity to review references in the OCP of accommodation. One change to Section 1.5 Access and Services in the OCP is recommended in order to more accurately reflect existing services:

There are no stores or commercial visitor accommodation facilities in the area, and no garbage pickup or publicly-funded fire protection services on these islands.

This change can be made by rescinding second reading, and giving second reading as revised prior to a second public hearing, tentatively scheduled before March 31, 2014.

REVISIONS TO THE LUB:

Definition of short term accommodation:

The following resolution was passed on January 16, 2014:

EXLTC-2014-001

IT was MOVED and SECONDED,

that the Executive Committee acting as a Local Trust Committee request that staff propose an alternative definition for short term vacation rental/accommodation by using a definition that relies solely on use and not the user.

The current definition in Proposed Bylaw No. 27 states:

“short-term accommodation” means the use or provision for commercial gain of temporary accommodation for persons or households who maintain a permanent residence elsewhere, for periods of less than 30 days at a time.

This definition was vetted through legal counsel during the draft bylaw review and again prior to report preparation and no concerns were identified with regards to inappropriate regulation of the user vs. the commercial use. As per the LTC resolution, staff has prepared an alternative definition for LTC consideration to address Trustees’ concerns:

“short-term accommodation” means the use for commercial gain of overnight accommodation for periods of less than 30 days at a time.

Both definitions are sound and staff requests the LTC indicate whether or not it wishes to amend the definition prior to proceeding to a public hearing.

Definition of Residence:

While reviewing the short term accommodation definition staff identified an inconsistency in the definition of residence that should be corrected prior to the public hearing. Staff is recommending the definition of “residence” in Section 1.1 be revised in order to avoid regulating by definition what is better suited to the newly expanded home occupation regulations. Staff recommends the definition be revised to read:

“residence” means a dwelling unit used for the domicile or home life of a person or persons, or the occasional or seasonal occupancy of a dwelling unit by an owner, or by a tenant under a residential tenancy agreement, ~~who has a permanent domicile elsewhere or by non-paying guests of such an owner; and for certainty, residential use does not include short term vacation rental, bed and breakfast use, the keeping of boarders or lodgers, or any occupancy of a dwelling unit by persons entitled to such an occupancy under a time share plan as defined in the Real Estate Development Marketing Act or successor legislation.~~

Home Occupation Regulations:

Staff is recommending the following Home Occupation regulation 3.7 (4) be amended in order to ensure that guest home accommodation use can only occur when the owner/operator/employee is present on the property:

- (4) *The operator or at least one of the employees of a home occupation must ~~reside~~ be present on the property while the home occupation is being conducted.*

The LTC can amend Proposed Bylaw No. 28 by rescinding second reading and giving second reading as revised with the new changes as deemed appropriate. All other revisions identified during the January 16, 2014 meeting were incorporated into the Proposed Bylaw at second reading at that meeting and are reflected in the attached bylaw.

Subdivision Potential:

Staff is not recommending any changes to the proposed Residential (R) zoning regulations for subdivision. A verbal request from the agent for the owner of a lot on West Ballenas Island has been made to the LTC to maintain 10 acres minimum /average lot sizes for potential future subdivision. A written statement was recommended to the agent by the LTC but at the time of report writing was not available. The potential land use and ecological implications of subdivision into fee simple parcels and potential increases in density are best evaluated on a case by case basis through a comprehensive rezoning application that addresses the islands' carrying capacity; access points and impacts of development on the island.

NEXT STEPS:

February 24, 2014 – If the LTC chooses to revise the proposed bylaws with the revisions outlined in this report, the LTC will need to rescind second readings and give second reading as revised. A LTC resolution is required to direct staff to schedule and notify residents and property owners of a second public hearing for both bylaws. No agency referrals are deemed necessary by staff.

March 2014 – Public hearing for Proposed OCP Bylaw No. 27 and LUB Bylaw No. 28.

April 2014 – A special meeting can be scheduled to consider third reading and forward bylaws to the Executive Committee and Minister of Community, Sport and Cultural Development.

Summer 2014 – Consideration of adoption.

Section 892(3) of the *Local Government Act* requires that notice of a public hearing be published in at least 2 consecutive issues of a newspaper, prior to a hearing. Notice would be published in the Parksville - Qualicum Beach News and mailed to the property owners. A letter to accompany the notice can also be mailed to residents and property owners explaining the need for a second hearing for the OCP and LUB. A sample letter is attached for LTC review.

RECOMMENDATIONS:

THAT the Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**):

1. Rescind second reading of proposed Bylaw No. 27 cited as the “Ballenas-Winchelsea Islands Official Community Plan Bylaw, 2013”
2. Give second reading to proposed Bylaw No. 27 cited as the “Ballenas-Winchelsea Islands Official Community Plan Bylaw, 2013” as revised; and
3. Rescind second reading of proposed Bylaw No. 28 cited as the “Ballenas-Winchelsea Islands Land Use Bylaw, 2013”
4. Give second reading to proposed Bylaw No. 28 cited as the “Ballenas-Winchelsea Islands Land Use Bylaw, 2013” as revised; and
5. Consider the consultation for the Ballenas-Winchelsea Official Community Plan and Land Use Bylaw project pursuant to s. 879 of the *Local Government Act* to be sufficient and that staff be requested to schedule a second public hearing, publish notification in the appropriate newspaper, and notify property owners within the plan area by mail out including the attached letter.

Prepared and Submitted by:

S. Zupanec

February 11, 2014,

Sonja Zupanec, RPP, MCIP
Island Planner

Date

Concurred in by:

Courtney Simpson

February 11, 2014

Courtney Simpson, RPP, MCIP
Regional Planning Manager

Date

Attachments:

1. Sample public hearing mail out letter
2. Proposed Ballenas – Winchelsea Islands Official Community Plan No. 27
3. Proposed Ballenas – Winchelsea Islands Land Use Bylaw No. 28

Ballinac Holding Ltd.
 12080 Horseshoe Way
 Richmond, BC
 Canada V7A 4V4
 (778)-889-1555

Island Trust
 1627 Fort St,
 Victoria,
 BC V8R 1H8

30 January 2014

To whom it may concern,

My name is Ying Wang, the current sole owner of West Ballenas Island. I am writing this letter to explain my vision for community based usage of my Island. The idea is to create a Beacon project that everyone can be proud of that showcases Ballenas natural flora and fauna, the biology and science that is so unique to this special island. We want to encourage the concept of ***lifelong learning***...not just hands on education for schoolchildren but to make the project attractive to a variety of demographics that otherwise would not have the structured opportunity to experience the beauty that is Ballenas!

As an essential part of the Master Plan we have designed the careful expansion of an eco/ green development of ten x 10 acre plots to support the visitor experience and encourage a year round visitor profile which will ensure the sustainability of the project

The plan creates a comprehensive “education first “ facility on the Island. and my aim with this document is to give the Trust Council Review Board sufficient material to create a positive argument for retaining the 10 acre subdivision of the Island. Without the existing subdivision ability the project will fail and my investment will be in great jeopardy. My plan and significant current investment was based on the assumption that the governing rules and regulations would stay the same as they have always been and allow my businessplan to be successfully executed.

After reading this brief overview I am sure that you will understand exactly why the subdivision potential is essential to the success of our sustainable business model to preserve the Islands attributes for generations to come.

Firstly I would like to show my genuine appreciation for the “***preserve and protect***” mandate that the Trust operates under and have this foremost in mind when discussing the envisioned project. These important values are a fundamental part of my own and my carefully hand picked teams core beliefs which are reflected in my carefully constructed edu/eco-plan that follows

My team has worked closely with local community groups and other non profit and for profit organizations in the development of this plan and although I am the Owner I really see my role as

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

steward of the Island for this period of time. My personal mission is to maintain and protect the outstanding natural resources so that they can be appreciated by as many visitors as the Island can sensibly managewithout detriment to the pristine environment.

Having said that it is really important that it is clearly understood that I bought the Island because it has a 10 acre subdivision potential. The plan in order to financially become viable HAS to have this ability so that the necessary funds can be put in place to assure the financial stability of the project. Whilst I applaud the overall “in principal” reasoning behind the proposed change in lot size, it seems illogical to make it retroactive against existing plans that have such far reaching repercussions for Ballenas including my future ambition for the Island. At the very least Ballenas should have a “Grandfather” clause that allows for the careful development as planned.

This document is deliberately designed to give you a high level overview to alert you to the overall intent with a glimpse of the details necessary to form a well rounded underlying businessplan. There are naturally further details available should they be needed.

As you can appreciate we have spent a lot of time and resources crafting the plan. This plan is a *work in progress* and we welcome the advice and co-operation of the Island Trust Organsiation to achieve their own goals in helping us create this unique opportunity for the benefit of those that we serve.. ...the general public!

Thank you for your interest in reading this document and hopefully connecting with our vision to help make this plan a reality for the benefit of many. Your support in keeping the ten acre subdivision will keep the plan viable and will play an important part in helping us achieve our mission:

“To make a difference in the lives of many through the unique opportunities of discovery”.

If you have any questions or need further information then please don’t hesitate to contact me at any time

Kindest regards
Sincerely,

Ying Wang
Owner, Ballenas Island

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Whats the Business Model?

The business model is to primarily create a visitor funded “education and preservation” underlying theme and also create a secondary income stream by an evergreen partnership between similar sympathetic Groups through the careful sale and subsequent management of the 10 x 10 acre subdivision lots. These sympathetically designed lots will be carefully controlled to create enhanced facilities in order to best serve the visitors.

This plan will maximise the potential of the island whilst creating a sustainable income stream to preserve and protect it for future generations’ enjoyment and education

How Is This Achieved?

We envisage a sympathetic development with a “soft” footprint that will comprise of different areas of the island that can support a variety of *edutainment* based activities including but not limited to life skills teaching, conservation and appreciation, and also necessary facilities to allow efficient support and visitor experience operations that are compliant with Island Trusts’ guidelines and wishes.

The context sensitive education/ entertainment and *life long learning* model has been successfully deployed in many different areas by passionate entities (see the successful sample groups at the end of this document ⁱ) who have many years’ of sustainable operations that have been drawn upon to create our own plan for a unique experience on Ballenas for people from all walks of life.

We will focus on attracting the development of the Islands visitors such as professionally supervised children, young adults and adults on corporate retreats as well as general foreign and domestic tourism based opportunities as well encouraging discounts for locals who will benefit from the different programs available in the five areas of life identified as: *self, family, leisure, community, and job/education.*

The Planned Facilities

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Ballenas Island comprises of a variety of areas that will provide different experiences and facilities for the visitors and guests.

The eco-engineered facilities will include (but are not limited to):

- Indoor and outdoor classrooms where teachers can demonstrate and educate
- Simple Laboratories for research and development
- Campgrounds for small and large groups
- Rest and relaxation areas
- Washing and toilet facilities
- Kitchen and food storage areas
- Restaurant and cafeteria areas
- Dormitory cabins for the colder and wetter seasons
- Necessary Offices and workshops for efficient management and maintenance

An example of potential groups that could be program stakeholders:

Power To Be (<https://www.powertobe.ca/>)

Power To Be provides adventure-based programs designed for youth and families in need of support. Through a collaborative approach and caring staff, Power To Be inspires connections with nature and the discovery of limitless ability. They achieve their mission by providing a unique and inclusive year-round outdoor education curriculum that promotes physical health and emotional well-being, develops interpersonal and leadership skills, teaches environmental and social stewardship, supports community engagement and family connectedness. We have a program leader at this group who has many years practical experience who is advising our steering committee on suitable programs they would engage in.

We see this as a collaborative project between these type of parties and the aim is to create a Ballenas **“beacon project”** that allows the potential of replicating the success of the concept to scale to other communities and participants.

The Ballenas project will enrich and inspire students through a variety of experiential marine and land science labs, cultural and historical awareness, ecology and sustainability and relevant field activities.

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Addendum 1: The Programs

We Will Cater To:

- Class specific outdoor education trips
- Environmental education curriculum enhancement
- Sports team training and teambuilding
- Student government leadership retreats
- University and College Groups
- Dormitory Community Building
- Departmental/Faculty Teambuilding
- Freshman Wilderness Orientations
- Resident Assistant (RA) training
- Duke of Education Excursions
- Eco Tourism
- Corporate Team Building

For younger visitors we aim to make a difference in the lives of children through unique opportunities of discovery.

All of our programs anticipate emphasize hands-on programs that encourage the children to do the science. Through the use of “toys” and unique educational settings, the students or campers are connected to the experience. This connection leads to personal discoveries, which is the learning process. The programs also help schools meet the state educational standards and provide students with programs that just cannot be duplicated in the traditional classroom.

Our entrepreneurial spirit has developed many unique programs that focus on science education, critical thinking skills, environmental issues, sustainability and personal development.

A great part of the activities in the Life Skills course takes place in a learning group composed of students and their learning guide, called a coach. The coach has received special training in techniques appropriate to the course. She/he has skills which they use to develop the learning situation described in the lesson, the fundamental Life Skills unit. Coaches have four main sources which they encourage students to exploit in their search for meaningful behavioral change: they have the resources, the skills, and experiences which the students themselves bring to the learning group; they have their own experiences and training; they have resources of the community on which to call; and they have the written materials which set out the content, the intermediate goals for behavioral change, and the final course goal of developing effective, problem-solving individuals. In sum, a Life Skills course consists of the coach and his/her training, the student and his/her experiences in their community, the written materials containing the content and course objectives, and the resources of the community.

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Revised From: The Dynamics of Life Skills Coaching

Paul R. Curtiss and Phillip W. Warren, 1973

Training, Research and Development Station Department of Manpower and Immigration

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Addendum 2: Program Objectives

Example of Life Skills Program content that focuses on:

- Understanding Life Skills Curriculum in the areas of self, family, job/education, community and leisure
- Becoming familiar with problem solving behaviors that are useful in the management of personal affairs
- Developing and facilitating Life Skills Lessons
- Leading experiential group process
- Modeling appropriate behavior
- Courses
- Self Awareness and Interpersonal Relations
- Instructional Methodology
- Experiential Exercises

This will be achieved through:

- Journals
- Video Feedback
- Peer Evaluation
- Facilitated Discussion
- Lectures
- Videos
- Films
- Guest Resources, speakers
- Small Group Tasks
- Role Play
- Skill and practice

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Addendum 3: Typical Anticipated Study Areas include:

First Nations History:

In addition to the natural studies we are offering a comprehensive study on the First Nations people who used Salt Spring Island as village sites. In this section students will learn about traditional fishing, hunting, travel, cooking and building. Students will travel by kayak a historic means of transportation for First Nations to a beach where they will be shown traditional pit cooking techniques and will have the opportunity to build a ceremonial sweat lodge. While cooking and building students will have an opportunity to use traditional tools as well. Students will learn about the First Nations people who live in British Columbia

BC Forest Ecology:

This program is aimed at teaching forest sustainability and will be given a tour and talk about forest sustainability and what this means to residents of British Columbia.

Local Indigenous Plants:

With this program you will walk through a variety of areas on the Island, including the waterfront. This program is aimed at teaching about the different native plants that are found on Ballenas Island with many of these species being found throughout the south coast of British Columbia.

Marine Mammals

The waters around Ballenas Island and the Southern Gulf Islands are filled with marine mammals and birds including seals, sea lions, mink, river otters, whales, porpoise, dolphins, seasonal ducks, shore birds and raptors. These Creatures are greatly affected by boats, air traffic and human pollutions. We will examine the behaviour of these mammals and their interactions with other mammals including humans.

Intertidal Studies:

Exploration of the intertidal zone of the Island by kayak. Exploring by kayak allows us to get right up along the shoreline where we can view sea stars, sea cucumbers, crabs and many other species. All of these species are dependent on each other for survival. Human interaction with this ecosystem, if negative, can have grave consequences on the entire ocean. With this program you will not only learn about the intertidal zone you will also learn some of the finer points of sea kayaking.

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

Expedition Programming

These all-inclusive programs may include any of the optional modules plus an array of environmental education in the field as we view marine mammals, intertidal life and sea birds. We set up camp sites and programs can include a 3-hour rescue course, prior to heading out. Programs are diverse and action packed with Team Building Initiatives, First Aid Scenarios, Survival skill training, Navigational skills and Route Planning. Groups can also set up Rock climbing sessions and do several of the education modules including Native Sweat Lodges. These programs are an unforgettable experience!!

English as a Second Language

(ESL) Programs

We will offer programs for ESL students and staff. Enjoy a fun and relaxing day on trips around the Island.

Day Programs

Day programs can offer leadership initiatives, any of our Eco Education programs, intertidal sessions, hikes or even kayak sessions

Overnight Programs

These all inclusive programs are either expedition-based, lodge-based or camping-based They include all your adventure activities & eco ed programming, plus full camping gear, food and instructors.

All guides will have years of experience in the outdoors and working with Youth:

Certified by the SKGABC (Sea Kayak Guides Alliance of B.C.)

Wilderness First Aid Certified

Hand Held Marine Operators license

Inter-tidal and Interpretive Training

Climbing and Belay Certified

While at Ballenas students will learn by doing. They will be challenged in a different way than they are in the classroom. They will be asked to look deep within themselves and set aside preconceived notions of their abilities. The result of a trip to Ballenas Outdoor Education Centre

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

will be truly memorable for the individual and the group as a whole. Building a cohesive class our programs unite students who, in most cases, wouldn't otherwise mix. Our objective is to create a memory students will hold onto for years to come.

"Tell me; and I will forget, show me and I may remember; involve me and I will understand."

Our programs cater to a wide variety of schools and ages. We design each program to meet the needs of each school, creating customized programs to enhance the student's experience. No matter what type of group, Ballenas Outdoor Education Centre can create a program to suit. You choose the activities that most interests you and we will design an experience around those activities that meets your goals in a safe and enjoyable manner. Our natural surroundings combined with our outstanding adventure activity instructors provides you and your group with an amazing experience you won't forget.

At Ballenas Outdoor Education Centre our goal is to make planning your school group outing as easy and time efficient as possible. We do this by providing you with all of the following services;

- Parent information evenings/ power point slide presentations
- Curriculum based programming, based on your school's specific goals and needs
- Delicious and nutritious meals that meet everyone's dietary requirements
- All the forms you will need to send home to parents
- Well trained and enthusiastic staff
- All necessary equipment

Learning through experience in the outdoors can be like discovering a whole new world. Within each and every one of us exists enormous potential for growth and learning. It is not without effort that this can be achieved.

References and Sample Target Organizations

ⁱ <https://www.powertobe.ca/>
<http://naturebasededucation.org/>
<http://www.natureexplore.org/>
<http://www.childrencountryday.org/>

Ballinac Holding Ltd.
12080 Horseshoe Way
Richmond, BC
Canada V7A 4V4
(778)-889-1555

<http://www.childrenandnature.org/>

<http://www.childrenandnature.org/directory/clubs/>

February 3, 2014

Mr. Ying Wang

10451 Palmberg Road
Richmond, BC V6W 1C5

RE: West Ballenas Island

Dear Ying,

Further to your request, I am pleased to provide you with my opinion on the potential impact that a down zoning of West Ballenas might have on its marketability and value.

As you know, the existing zoning of the island would permit the creation of lots with a minimum lot size of 10 acres. Of course, any such subdivision would need to meet a host of “prior-to” conditions that might include the provision of water, septic capacity, moorage and other potential infrastructure components.

While I do not believe that there is currently a market for any such subdivision of the island, I do believe that the removal of the potential to subdivide in the future would definitely have an impact to marketability and, by extension, the value of the island. Any prospective future purchaser(s) of the island would have to take into account the potential bundle of property rights afforded by the topography, location, accessibility and jurisdictional and zoning elements when making a purchase decision. Obviously, most of these attributes cannot be altered. However, changing the potential of the island would undoubtedly have a negative impact on value.

I have been a licensed Realtor in British Columbia since 1991. Prior to becoming a Realtor, I was a municipal planner. In my real estate career, I have developed an expertise in the marketing and sale of unique real estate assets such as private islands. My opinion on the impact of downzoning West Ballenas Island is based on my direct experience marketing similar assets both in and outside of British Columbia.

I trust this letter will be of value to you.

Sincerely,



Mark Lester

Jones Lang LaSalle Real Estate Services

Senior Vice President

Tel + 1 604 998 6130

Mobile + 1 604 880 7874

mark.lester@am.jll.com



**BALLENAS-WINCHELSEA ISLANDS
OFFICIAL COMMUNITY PLAN
BYLAW No. 27, 2013**

Consolidation as of: _____, 20__

PROPOSED

ISLANDS TRUST EXECUTIVE COMMITTEE ACTING AS A LOCAL TRUST COMMITTEE (Ballenas – Winchelsea Islands) BYLAW NO. 27

A BYLAW TO ADOPT AN OFFICIAL COMMUNITY PLAN FOR THE BALLENAS-WINCHELSEA ISLANDS

WHEREAS Section 29 of the *Islands Trust Act* gives the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) the same power and authority of a Regional District under Part 26 except sections 932 to 937 and 939 of the *Local Government Act*;

AND WHEREAS the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) wishes to adopt an Official Community Plan;

AND WHEREAS the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) has held a Public Hearing;

NOW THEREFORE the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) enacts as follows:

1. TITLE

Bylaw 27 may be cited for all purposes as the “Ballenas-Winchelsea Islands Official Community Plan Bylaw, 2013”.

2. APPLICATION

The Plan applies to the land, the water on the land, the bed of the sea, the water column, and surface of the sea adjacent to the land in the Ballenas-Winchelsea Islands as shown on Schedule “B” of this Bylaw.

3. SCHEDULES

The following schedules attached to and forming part of this Bylaw, are adopted as “Ballenas-Winchelsea Islands Official Community Plan Bylaw 2013”:

SCHEDULE “A” – Official Community Plan Policy Document

SCHEDULE “B” – Bylaw Area Map

SCHEDULE “C” – Land Use Designations

READ A FIRST TIME this	3rd	day of	May	, 2013
READ A SECOND TIME this	16th	day of	January	, 2014
PUBLIC HEARING HELD this		day of	r	, 201x
READ A THIRD TIME this		day of		, 201x
APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST this		day of		, 201x
APPROVED BY THE MINISTER OF COMMUNITY, SPORT AND CULTURAL DEVELOPMENT this		day of		, 201x
ADOPTED this		day of		, 201x

SECRETARY

CHAIRPERSON

TABLE OF CONTENTS

SCHEDULE A – Policy Document.....	1
1. BACKGROUND	1
1.1 THE OBJECT OF THE ISLANDS TRUST	1
1.2 THE BALLENAS-WINCHELSEA ISLANDS PLANNING AREA	1
1.3 OFFICIAL COMMUNITY PLAN	3
1.4 NATURAL FEATURES.....	4
1.5 ACCESS AND SERVICES.....	5
1.6 POPULATION AND SETTLEMENT PATTERNS.....	5
1.7 DEVELOPMENT POTENTIAL.....	5
2. PLAN GOALS.....	6
3. OBJECTIVES AND POLICIES	7
3.1 LAND USE OBJECTIVES.....	7
3.2 RESIDENTIAL LAND USE POLICIES.....	7
3.3 COMMERCIAL AND INDUSTRIAL LAND USE POLICIES.....	8
3.4 AGRICULTURAL POLICIES	8
3.5 FOREST LAND USE POLICIES.....	8
3.6 COMMUNITY AND PUBLIC SERVICE USE POLICIES	9
3.7 POLICIES FOR PARKS, RECREATION, AND CONSERVATION AREAS.....	10
3.8 POLICIES FOR MARINE AND SHORELINE USES.....	11
3.9 TRANSPORTATION POLICIES.....	13
3.10 CULTURE AND HERITAGE POLICIES.....	13
3.11 SENSITIVE ECOSYSTEM POLICIES.....	14
3.12 GROUNDWATER POLICIES	15
3.13 SOILS AND AGGREGATES POLICIES	15
3.14 NATURAL HAZARDS POLICIES.....	15
3.15 SERVICES AND INFRASTRUCTURE POLICIES.....	16
4. CLIMATE CHANGE ADAPTATION AND MITIGATION	17
4.1 TARGET	17
4.2 OBJECTIVES	17
4.3 POLICIES.....	18
4.4 ACTIONS	18
5. DEVELOPMENT PERMIT AREAS, TEMPORARY USE PERMITS AND DEVELOPMENT APPROVAL INFORMATION.....	20
5.1 DEVELOPMENT PERMIT AREAS	20
5.1.1 SHORELINE DEVELOPMENT PERMIT AREA.....	21
5.2 TEMPORARY USE PERMITS.....	26
5.3 DEVELOPMENT APPROVAL INFORMATION.....	27

6. ADMINISTRATION AND INTERPRETATION28

6.1 PURPOSE.....28

6.2 ISLANDS TRUST AUTHORITY.....28

6.3 AREA OF JURISDICTION28

6.4 ADVOCACY POLICIES.....28

6.5 PUBLIC FACILITIES29

6.6 IMPLEMENTATION29

6.7 INTERPRETATION29

6.8 AMENDMENT PROCEDURE.....31

6.9 SEVERABILITY.....31

SCHEDULE B – Bylaw Area Map.....32

SCHEDULE C – Land Use Designations33

SCHEDULE A – Policy Document

1. BACKGROUND

1.1 THE OBJECT OF THE ISLANDS TRUST

The Islands Trust has responsibility for conservation through land use planning and regulation and for leadership in stewardship – that is, voluntary, cooperative actions that nurture and take responsibility for the long-term integrity of the environment and amenities of the Trust Area. The Islands Trust seeks to integrate ecosystem preservation and protection, sustainable communities and stewardship of resources.

The *Islands Trust Act* provides the following definition of the purpose of the Islands Trust, which is referred to in legislation as its “object”:

“The object of the Trust is to preserve and protect the Trust Area and its unique amenities and environment for the benefit of the residents of the Trust Area and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the Government of British Columbia.”



1.2 THE BALLENAS-WINCHELSEA ISLANDS PLANNING AREA

The Ballenas-Winchelsea Islands encompass over 19 islands and numerous other islets and rocks that make up the Ballenas-Winchelsea archipelago located in the waters of the Salish Sea adjacent to the Nanoose Peninsula on Vancouver Island. This unique area was first settled by the Coast Salish people. Several islands in the Plan Area are nationally recognized for significant biological diversity, important habitat and rare plant species. All of the islands

are jurisdictionally part of the Executive Committee Local Trust Area of the Islands Trust. Additionally, all of the islands fall within Electoral Area E of the Regional District of Nanaimo.

The majority of the islands in Ballenas-Winchelsea Group are owned by the Crown. The northern group of the Winchelsea Islands is Crown land leased to the Department of National Defence, which also owns and manages East Ballenas Island. The northern tip of West Ballenas is owned by the Federal Government for the operation of the Ballenas Island light station. In addition, Gerald Island is a Provincial Park, and south Winchelsea Island has been acquired by The Land Conservancy.

The area covered by the Plan is shown on “Schedule B - Bylaw Area Map”, and includes the following land and water areas:

- Ada Islands (East)
- Ada Islands (North)
- Ada Islands (West)
- Amelia Island
- Ballenas Island (West)
- Ballenas Island (South)
- Douglas Island
- Gerald Island
- Maude Island
- Mistaken Island
- Ruth Island
- Southey Island
- Wallis Island
- Winchelsea Island
- Winchelsea Islands A,B,C and D
- Yeo Island (West)
- Yeo Island (East)

These islands and surrounding waters are within the First Nations traditional territories of the Nanoose, Cowichan, Halalt, Lake Cowichan, Lyackson, Penelakut, Qualicum, Chemainus, We Wai Kai and K'omoks.

Much of the land in the planning area is held by the federal or provincial Crown. The use and development of this land will generally not be subject to the land use designations and policies in this Plan, unless the Crown licenses, leases or transfers the land to private individuals or organizations.

Where the terms “Ballenas-Winchelsea Group”, “Ballenas-Winchelsea Planning Area”, “planning area”, or “Plan area” are used in this Plan, these terms shall be interpreted to mean the area covered by this Plan. Where a specific geographical reference is made (e.g. Gerald Island), that reference shall be interpreted to mean the specific geographic area.

1.3 OFFICIAL COMMUNITY PLAN

The purpose of the Ballenas-Winchelsea Islands Official Community Plan (hereafter referred to as the “Plan”) is to provide direction for decisions of government, non-profit organizations and individuals, regarding management of the Ballenas-Winchelsea Islands. The Plan is a statement of objectives and policies to guide decisions on planning and land use management and should provide direction for development and consideration within the island communities.

The Plan is a document prepared and adopted, in accordance with the *Local Government Act* and the *Islands Trust Act*, by the Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) (LTC) being the land use authority for the Ballenas-Winchelsea Islands.

Once the Plan has been adopted, all bylaws enacted or works undertaken by the LTC must be consistent with it. The Plan can be amended on the initiative of the LTC or on application by an outside party subject to LTC approval. All amendments require consultation with persons, organizations and authorities that the LTC considers will be affected.

The Plan must include statements and map designations related to the following topics:

- The location, type and density of residential development;
- Restrictions on the use of land that is subject to hazardous conditions or that is environmentally sensitive to development;
- Agricultural, recreational, commercial, industrial, institutional, and public utility uses;
- Affordable, special needs and rental housing;
- The location and phasing of roads, sewer and water systems;
- Targets for the reduction of greenhouse gas emissions and policies and actions of the local government proposed with respect to achieving those targets;
- The location of public facilities, including schools, parks and waste treatment sites; and
- Sand and gravel deposits suitable for extraction.

The Plan may include policies related to social needs, social well-being and social development, the maintenance and enhancement of farming and the regulation of the preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity.



1.4 NATURAL FEATURES

The islands are part of the coastal Douglas-fir biogeoclimatic or ecological zone, which results from a rainshadow effect of the Vancouver Island and Olympic mountains. This zone is characterized by coniferous forests and open meadows and woodlands that are adapted to conditions that are drier than most other coastal regions of British Columbia. The climate of this area is considered temperate with mild wet winters and relatively cool but dry summers.

Douglas-fir is common throughout the region with the red-listed Garry Oak-Arbutus community also well represented. An undisturbed ecosystem type known as the Shore Pine – Cladina – Kinnikinnick plant community also exists here, and the very rare Water-plantain buttercup has been identified on East Ballenas Island. Rocky outcrops and coastal bluff habitat are also predominant on the islands in this region.

The islands of the Ballenas-Winchelsea Archipelago are known to have high biodiversity value. This is demonstrated through the area's significant role as a nursery for marine life and as a breeding and nesting ground for many species of birds. As well, the islands support several occurrences of endangered species and ecosystems. Human presence is generally minimal, even though the area is of significance for sport and recreational fishing. The islands are part of the Nanaimo Lowland physiographic region, which is bounded by the Georgia Depression to the east and the Vancouver Island Mountains to the west. Soils tend to be gravelly and sandy and are very shallow with significant amounts of exposed bedrock.

1.5 ACCESS AND SERVICES

The islands, with the exception of Mistaken Island, are not served by power, water or telephone land-lines. There are no stores or commercial visitor accommodation facilities in the area, and no garbage pickup or publicly-funded fire protection services on these islands.

Landowners are required to provide water and sewage disposal on-site. To date, the use of the islands has been largely seasonal and recreational. There are no ferries, no paved roads, and limited year-round moorage. Access to the islands is by private boat, water taxi or float plane.

1.6 POPULATION AND SETTLEMENT PATTERNS

Few if any of the islands have permanent residents. Census population data from Statistics Canada are not adequate to determine the permanent populations as data have been aggregated with data from other locations. Only three of the islands are under private ownership, with the remainder being held either by the provincial or federal Crown, and this has a curtailing effect on the overall population of the area.

1.7 DEVELOPMENT POTENTIAL

The previous subdivision regulations established a minimum lot size of 4 hectares (10 acres) on most islands. As of 2011, none of the islands had been subdivided, with the exception of West Ballenas which contains a federal Crown lot for the lighthouse on the northern end in addition to the privately held southern portion. The number of lots in the Ballenas-Winchelsea Islands Area therefore nearly corresponds with the number of islands and islets. Apart from structures associated with the Department of National Defence, residential buildings exist on inhabited Mistaken Island, and there is a cabin on South Winchelsea, owned by the Land Conservancy of British Columbia.

2. PLAN GOALS

- 2.1 To preserve and protect the ecosystems, habitat, and natural resources of the Ballenas-Winchelsea Islands Planning Area.
- 2.2 To ensure that human activities and the scale, rate and type of development contribute to the preservation of the ecological attributes and character of the Ballenas-Winchelsea Islands Planning Area.
- 2.3 To work cooperatively with other local governments, the federal and provincial governments and their agencies and First Nations to advance the mandate of the Islands Trust and the Goals and Objectives of this Plan.

3. OBJECTIVES AND POLICIES

3.1 LAND USE OBJECTIVES

- 3.1.1 To limit growth and development in order to protect sensitive ecosystems, encourage sustainability, and minimize the potential effects of climate change.
- 3.1.2 To accommodate a limited number of residents and visitors in order to preserve ecosystem integrity and the unique scenic character of the area.
- 3.1.3 To manage any development in a manner that minimizes hazards and avoids impacts to the environment.
- 3.1.4 To guide and regulate growth and development in a manner that puts protection of the natural environment first and that builds on existing physical and social infrastructure where possible.

3.2 RESIDENTIAL LAND USE POLICIES

- 3.2.1 The traditional land use in the plan area has been minimal and the LTC bylaw provisions should preserve the character of the area.
- 3.2.2 The LTC should continue to permit single family residential uses as the principal use on privately held lands.
- 3.2.3 The LTC may consider implementing siting and use permits for all new construction or use on privately held lands.
- 3.2.4 LTC bylaw provisions should ensure that uses customarily considered accessory to residential uses are permitted and regulated.
- 3.2.5 Commercial vacation rentals should not be permitted.
- 3.2.6 Density should be limited to one dwelling per 4 hectares (10 acres).
- 3.2.7 Subdivision regulations should not permit subdivision without rezoning.
- 3.2.8 The LTC should support applications to rezone to permit subdivision where the proposal would result in:
 - 3.2.8.1 Clustered development that minimizes the ecological and visual impacts of development; and
 - 3.2.8.2 Total floor area of dwellings is minimized; and
 - 3.2.8.3 Development being directed away from hazardous areas and sensitive ecosystems.
- 3.2.9 The LTC should establish zoning regulations that limit the number, size and height of accessory buildings on residential properties.

3.2.10 Affordable and special needs housing is considered inappropriate for this area due to the remote nature of the islands.

3.2.11 Rental housing other than single family housing is considered inappropriate for this area due to the remote nature of the islands.

Advocacy Policies

3.2.12 The Regional District of Nanaimo and Island Health are encouraged to implement sustainable building standard initiatives as appropriate for the low density rural nature of development in the Plan area.

3.3 COMMERCIAL AND INDUSTRIAL LAND USE POLICIES

3.3.1 There are currently no locations in which commercial and industrial uses are a permitted principal use. Given the remoteness, small size and pristine nature of the islands, and the mandate of Islands Trust to preserve and protect the unique amenities and environment of the area, commercial and industrial uses are not considered appropriate in the Plan area.

3.3.2 Home occupations should be permitted as a use accessory to residential uses and should be regulated to minimize impacts.

3.4 AGRICULTURAL POLICIES

3.4.1 There is currently no land identified as having agricultural potential on the islands.

3.5 FOREST LAND USE POLICIES

3.5.1 The LTC should identify significant unfragmented forest ecosystems within the planning area and consider establishing zoning to limit inappropriate development in these areas and to cluster development elsewhere.

Advocacy Policies

3.5.2 The LTC encourages other agencies and levels of government to designate, acquire, or establish forest ecosystem reserves where no extraction will take place to ensure the preservation of native biological diversity.

3.5.3 The LTC encourages landowners to protect sensitive forest ecosystems through donation, conservation covenants, the use of incentives such as the Natural Area Protection Tax Exemption Program (NAPTEP), or careful management.



3.6 COMMUNITY AND PUBLIC SERVICE USE POLICIES

- 3.6.1 The LTC may establish zoning within this designation, or within the residential designation, to permit and regulate local community services such as meeting halls, infrastructure, and emergency service facilities.
- 3.6.2 Zoning should recognize existing public uses, such as light stations.
- 3.6.3 Given the limited development on the islands in the Plan area, there is no demand for school facilities. A need to designate land for future school use is not anticipated.

Advocacy Policies

- 3.6.4 Residents in the Plan area are encouraged to be self-sufficient with regard to disposal of waste.
- 3.6.5 The RCMP, Canadian Coast Guard, fire protection, regional districts, search and rescue organizations, and the Emergency Management BC are requested to be responsive to the planning area needs and to assist residents in setting up adequate safety, protection and communication mechanisms.



3.7 POLICIES FOR PARKS, RECREATION, AND CONSERVATION AREAS

- 3.7.1 The LTC should support the preservation of ecologically sensitive areas through land use regulation, conservation covenants, park land dedication, or voluntary conveyance to conservation agencies.
- 3.7.2 The LTC is encouraged to require dedication of land, rather than cash-in-lieu, where parkland dedication is required at the time of subdivision, as authorized by the *Local Government Act*.
- 3.7.3 The LTC may undertake or support initiatives to identify locations that are a priority for the creation of safe public access to beaches, areas of recreational significance, linear parks and trails, and public anchorages, in cooperation with other agencies and groups.
- 3.7.4 The LTC should, in cooperation with conservation groups and other agencies, undertake planning for the establishment and maintenance of a network of protected areas.
- 3.7.5 The LTC should permit through zoning, the use of one cabin for short term accommodation or custodial residential uses on South Winchelsea Island.
- 3.7.6 Most Crown islands and islets are included in this land use designation and should be zoned for Nature Protection.
- 3.7.7 Rezoning of any Crown islands that are transferred to private ownership for residential uses may be considered through application.

Advocacy Policies

- 3.7.8 The LTC should strongly encourage the Federal and Provincial Crown to only consider disposition of land for ecological conservation purposes, and to consult with the LTC to ensure that any dispositions are in accordance with this Plan.
- 3.7.9 The LTC should strongly encourage the Regional District, the Islands Trust Fund and other conservation organizations to investigate the acquisition, purchase and secured protection of any future lands disposed of by the Crown or privately sold.
- 3.7.10 The LTC should encourage the regional district and provincial and federal governments to identify and designate areas for low impact recreational activities that reflect the undisturbed nature of the area and discourage facilities and opportunities for high impact recreational activities in the planning area.



3.8 POLICIES FOR MARINE AND SHORELINE USES

- 3.8.1 The LTC should identify and consider protecting ecologically sensitive marine areas.
- 3.8.2 Zoning should permit shellfish aquaculture within existing tenures.
- 3.8.3 The LTC may consider rezoning applications for new leases for aquaculture, other than finfish farms.

- 3.8.4 The LTC should recognize and support the marine dependent nature of land uses in the Ballenas-Winchelsea Islands Area.
- 3.8.5 The LTC should permit one (1) dock adjacent to each private island in order to limit the need for multiple private dock development along the shoreline.
- 3.8.6 The LTC should only consider individual private docks accessory to residential uses where necessary for access. These docks should be regulated by zoning.
- 3.8.7 The LTC should not permit commercial marinas.
- 3.8.8 The LTC should use bylaw provisions to protect public access to, from and along the marine shoreline.
- 3.8.9 The LTC should use bylaw provisions to limit structures within the setback from the sea to those related to permitted marine uses and those necessary for access to the foreshore.
- 3.8.10 The LTC should, through zoning, the use of setbacks, and the use of development permit areas:
 - (a) protect the integrity of the foreshore, shoreline, and natural coastal and intertidal processes;
 - (b) discourage uses that disrupt natural features and processes;
 - (c) allow for natural erosion and accretion processes;
 - (d) encourage owners of shoreline properties to retain natural vegetation and natural features on areas adjacent to the foreshore; and
 - (e) discourage filling, deposit, excavation, or removal of foreshore and seabed materials.
- 3.8.11 The LTC should not permit the hardening of the shoreline.
- 3.8.12 The LTC should not support ocean disposal applications within the Plan area.
- 3.8.13 The LTC should not support the creation of artificial reefs within the Plan area.

Advocacy Policies

- 3.8.14 The LTC should support the protection of the planning area as part of any provincial or federal marine protection/ conservation initiative.
- 3.8.15 The LTC should support and encourage new and existing Rockfish Conservation areas in the Plan area.
- 3.8.16 The LTC should encourage the responsible government agencies to refer applications for commercial seaweed harvesting within the plan area to the LTC.

3.9 TRANSPORTATION POLICIES

- 3.9.1 Zoning may provide for facilities for emergency helicopter access in appropriate locations.

Advocacy Policies

- 3.9.2 The LTC should support efforts by residents, local governments and agencies to ensure that reasonable access including safe passage and moorage is provided to the plan area from adjacent regional districts and municipalities.

3.10 CULTURE AND HERITAGE POLICIES

- 3.10.1 The LTC recognizes First Nations past and current interests relating to land and resources in the Ballenas-Winchelsea Islands.
- 3.10.2 The LTC recognizes that portions of the planning area may be subject to unextinguishable aboriginal rights or title that are protected under the *Constitution Act*, 1982.
- 3.10.3 The LTC will work to establish government-to-government relationships with First Nations that have an interest in the Ballenas-Winchelsea Islands Area, in order to identify and assist in protecting significant archaeological or cultural sites in the planning area.
- 3.10.4 The LTC should support initiatives to identify lands and structures of natural, historic, archaeological, cultural, aesthetic, educational or scientific heritage value or character.
- 3.10.5 The LTC may amend this plan to designate any real property as a designated heritage site or heritage conservation area under Part 27 of *Local Government Act*.
- 3.10.6 All development applications received by Islands Trust will be reviewed by planning staff for the presence of known and recorded archaeological sites. Applicants will be notified if the site includes a known, protected archaeological site. Notification may include direction to engage a professional consulting archaeologist to determine if an archaeological impact assessment is necessary to manage development related impacts. In cases where no application is required for development, the landowner is responsible for ensuring that archaeological sites are not disturbed.
- 3.10.7 Applicants should modify or revise proposed development plans to avoid archaeological site impacts as the best means of preserving archaeological resources. Alteration of a protected archaeological site requires a Provincial Heritage Alteration Permit prior to land altering activities. Landowners are encouraged to contact and work with First Nations to protect archaeological and cultural sites.

Advocacy Policies

- 3.10.8 The LTC may advocate for the designation and protection of eligible heritage sites under the *Heritage Conservation Act*.

Information Note: Archaeological sites (both known and unknown) are protected under the Heritage Conservation Act and must not be altered or damaged without a permit from the Archaeology Branch. Given the islands have significant potential to contain unknown archaeological sites, the Archaeology Branch recommends that a qualified (able to hold heritage inspection permits through the Archaeology Branch) consulting archaeologist should be engaged prior to any land-altering activities to determine if development activities are likely to impact any archaeological sites.



3.11 SENSITIVE ECOSYSTEM POLICIES

- 3.11.1 The LTC should support and undertake initiatives to identify environmentally sensitive areas and significant natural sites, features and landforms in the planning area.
- 3.11.2 The LTC should support and undertake initiatives to plan, establish, and maintain a network of protected areas that preserves the representative ecosystems of the area and maintains its ecological integrity.
- 3.11.3 The LTC should protect environmentally sensitive areas, significant natural sites, features, views, scenic areas and landforms in the planning area through:

- (a) zoning regulations that encourage the siting and clustering of new development away from sensitive areas for the islands with development potential;
- (b) the implementation of development permit areas ;
- (c) acquisition of land by the Islands Trust Fund, other conservancies, regional districts, and government agencies;
- (d) park dedication at the time of subdivision; and
- (e) encouragement of voluntary stewardship including the use of tools such as conservation covenants and the use of incentives such as the Natural Area Protection Tax Exemption Program.

3.11.4 The LTC should, in its bylaw provisions and applications, consider the cumulative effects of any proposed development on sensitive ecosystems and groundwater supplies.

Advocacy Policies

3.11.5 Despite there being no identified Riparian Areas Regulation (RAR) watersheds in the Plan Area, the LTC should support the protection of freshwater and riparian habitat.

3.12 GROUNDWATER POLICIES

3.12.1 Land use designations, zoning, subdivision regulations and other planning tools should be used to ensure that neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater.

3.12.2 The LTC, in its bylaw provisions and in considering applications, should ensure that water quality is maintained, that existing, anticipated and seasonal demands for water are considered and addressed, and that new uses do not affect water availability to the detriment of existing uses.

3.12.3 The precautionary principle should be applied with respect to the planning, utilization and protection of potable water supplies, so that property owners, developers and government agencies act with a conservative approach regarding the impacts of land use on island water supplies.

3.13 SOILS AND AGGREGATES POLICIES

3.13.1 The LTC should use zoning and other applicable planning tools to protect identified areas of productive soil.

3.13.2 There are no known deposits of aggregates suitable for extraction in the Plan area. Mineral extraction is regulated under provincial acts and statutes and is not affected by policies contained within the OCP.

3.14 NATURAL HAZARDS POLICIES

3.14.1 The LTC should undertake initiatives to identify areas that are hazardous to development, including areas subject to flooding, erosion or slope instability.

3.14.2 The LTC should use appropriate tools, including setbacks and development permit area designations, to restrict and manage development in areas known to be subject to hazardous conditions.

3.15 SERVICES AND INFRASTRUCTURE POLICIES

3.15.1 No water line or power connections to the mainland should be permitted other than those in place and in use at the time of adoption of this Plan.

3.15.2 The construction of new power lines should be discouraged.

3.15.3 As islands in the plan area are mostly self sufficient with respect to power, water and septic disposal, the LTC should recognize the challenges associated with providing services on the islands, and LTC bylaw provisions should support the provision of power through renewable small-scale, passive means such as solar collectors and wind generation

3.15.4 LTC bylaw provisions should permit small-scale, geo-exchange heating for individual dwellings.

3.15.5 The use of alternative technology to the traditional septic field, and the safe recycling of grey water, is supported by the LTC if methods can provide effective non-polluting and energy efficient means to treat and dispose of effluent and are in compliance with all other government regulations.

Advocacy Policies

3.15.6 Landowners undertaking new construction are encouraged to install rainwater catchment systems.

4. CLIMATE CHANGE ADAPTATION AND MITIGATION

Background:

Climate change is the result of increasing concentration of heat-trapping greenhouse gases (GHGs) in the atmosphere as the result of human activities; primarily the burning of fossil fuels and large-scale deforestation made possible through advances in technology and industrialization. The amount of GHGs in the atmosphere has increased in the last 200 years, and has caused a rise in average temperature of air and ocean water. Around the world, people interested in reducing GHG emissions are finding ways to reduce their carbon footprint and decrease or reverse the rate of temperature rise.

The Province of British Columbia, in response to public interest in reducing GHG emissions, adopted Bill 27, the *Local Government (Green Communities) Statutes Amendment Act*. The intent of the Act is to reduce GHGs, conserve energy, and create more sustainable communities. Most significantly, Bill 27 amended the *Local Government Act*, requiring that all local governments include GHG emission reduction targets, and policies and actions to achieve those targets, in their Official Community Plans.

The Ballenas-Winchelsea Islands Area is unique in that, given the challenges found in living and recreating on the Islands, residents and seasonal visitors typically attempt to live lightly on the landscape. Homeowners may already use solar or other alternative energy sources, and seasonal occupancy of most homes and cottages means no emissions are produced for significant portions of the year. Reducing GHG emissions in this Plan Area takes on a different meaning when the fact that emissions are considerably lower than would be found in highly developed communities with readily accessible services is taken into consideration.

The following target, objectives, policies and actions are the first step to ensuring that the reduction of GHG emissions specifically and the impact of climate change in general become part of the evaluation process for land use planning in the Ballenas-Winchelsea Islands Plan Area.

4.1 TARGET

- 4.1.1 This plan commits to achieve by 2020 and 2050 resident per capita emission levels of 50% or less than the Canadian per capita average for 2020 and 2050, respectively. Within the planning area, this reduction will be achieved by actions resulting from individual and community initiatives, the actions of other levels of government, technological changes, and changes to land use policies and regulations.

4.2 OBJECTIVES

- 4.2.1 To consider the impacts of climate change as a central factor in land use decision-making.
- 4.2.2 To support actions to minimize greenhouse gas emissions.
- 4.2.3 To recognize the importance of forested lands and unfragmented natural ecosystems in removing carbon dioxide from the atmosphere.

4.3 POLICIES

- 4.3.1 The LTC should, in its bylaw provisions and review of development applications, consider the potential impacts on global climate change and GHG reduction targets.
- 4.3.2 The LTC should investigate new methods of measuring GHG emissions that are relevant to the plan area.
- 4.3.3 The LTC should work with other government agencies, stakeholders and the residents of the Ballenas-Winchelsea Islands to achieve energy conservation and emissions reduction goals.
- 4.3.4 The LTC should identify significant unfragmented forest and non-forest ecosystems within the planning area and ensure that these areas are noted on mapping for both their environmental and carbon sequestration value.
- 4.3.5 When considering transportation options by air, water or land, both residents and agencies with jurisdiction over services and infrastructure are encouraged to:
 - (a) Reduce fuel requirements;
 - (b) Reduce the extent of infrastructure (for example, through the development of common docks or road/trail construction that minimizes the right of way); and
 - (c) Limit the impact on the natural environment.

4.4 ACTIONS

- 4.4.1 The LTC should work with the Islands Trust Fund and other conservation organizations to promote the conservation of forested land as a cost effective and important climate change mitigation strategy.
- 4.4.2 Residents are encouraged to:
 - (a) Incorporate high energy efficiency into building design and construction and use carbon-efficient materials in new construction;
 - (b) Limit the use of fossil-fuel burning engines or generators and use alternative energy sources where possible; and
 - (c) Limit the burning of refuse.
- 4.4.3 Government agencies, when considering establishment of new infrastructure or changes to existing infrastructure on the Islands , are strongly encouraged to mitigate impacts on the natural environment for any proposals for park, trail, road, ferry, dock, or infrastructure development.

- 4.4.4 The importation of bulk water adds to GHG emissions through the transportation of water by boat or barge. The LTC encourages alternative methods of increasing water self-sufficiency on the Islands.

5. DEVELOPMENT PERMIT AREAS, TEMPORARY USE PERMITS AND DEVELOPMENT APPROVAL INFORMATION

5.1 DEVELOPMENT PERMIT AREAS

Background

Pursuant to Section 919.1 of the *Local Government Act* a community plan may designate development permit areas for one or more of the following:

- a. protection of the natural environment, its ecosystems and biological diversity;
- b. protection of development from hazardous conditions;
- c. protection of farming;
- d. revitalization of an area in which a commercial use is permitted;
- e. establishment of objectives for the form and character of intensive residential development;
- f. establishment of objectives and the provision of guidelines for the form and character of commercial, industrial or multi-family residential development;
- g. in relation to an area in a resort region, establishment of objectives for the form and character of development in the resort region.
- h. establishment of objectives to promote energy conservation;
- i. establishment of objectives to promote water conservation; and
- j. establishment of objectives to promote the reduction of greenhouse gas emissions.

5.1.1 SHORELINE DEVELOPMENT PERMIT AREA

Designation:

The Shoreline Development Permit Area includes all land 30 m upland of the natural boundary of the sea.

Authority:

The Shoreline Development Permit Area is designated a development permit area pursuant to Section 919.1(1)(a) of the *Local Government Act* for the protection of the natural environment, its ecosystems and biological diversity, and Section 919.1(1)(b) for the protection of development from hazardous conditions.

Special Conditions and Objectives That Justify the Designation:

It is the Object of the Islands Trust to “Preserve and protect the Trust Area and its unique amenities and environment of the Trust Area for the benefit of the residents of the Trust Area, and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia.”

It is Provincial legislation in Section 877(1)(d) of the *Local Government Act* that an official community plan must include statements and map designations for the area covered by the Plan respecting restrictions on the use of land that is subject to hazardous conditions, or that is environmentally sensitive to development.

It is policy of the Islands Trust Council that protection must be given to the natural processes, habitats and species of the Trust Area, including those of open coastal grasslands, the vegetation of dry rocky areas, estuaries, tidal flats, salt water marshes, drift sectors, lagoons, kelp and eel grass beds and that development, activity, buildings or structures should not result in a loss of significant marine or coastal habitat, or interfere with natural coastal processes.

It is also policy of the Islands Trust Council that local trust committees shall in their Official Community Plans and regulatory bylaws, address:

- the protection of sensitive coastal areas;
- the planning for and regulation of development in coastal regions to protect natural coastal processes;

Shorelines within the Ballenas-Winchelsea Islands Area have high ecological values. Due to their physical and biological characteristics and relatively undeveloped state, they need to be carefully managed to avoid potential negative impacts of development. Development and associated shoreline improvements or protection measures can threaten the ecological and physical integrity of the foreshore and upland. In addition, sea level rise, storm surges, increased storm intensity and other anticipated effects of climate change as well as steep slope hazard areas may exert negative effects on potential development.

The Objectives of the development permit area are:

1. To plan and regulate new development in a manner that preserves and protects the long-term physical integrity and ecological values of shorelines and associated foreshore and upland areas.
2. To balance development opportunities with the ecological conservation of the shoreline environment.
3. To minimize the disruption of natural features and processes and to retain, wherever possible, natural vegetation and natural features.
4. To adapt to the anticipated effects of climate change.
5. To protect development from hazardous conditions.

Development Approval Information:

The area is also designated an area for which development approval information (DAI) may be required according to Section 920.01(1)(c) of the *Local Government Act*. The designation of these areas as DAI is based on the special conditions or objectives supporting the designation of the DPA. Development approval information means information on the anticipated impacts of the proposed activity or development.

Applicability:

This Development Permit Area applies to all construction and land alteration proposed within the Shoreline DPA. A development permit is required for construction of, addition to, alteration of a building or structure, and land alteration, including vegetation removal except where such activities are specifically exempt.

Exemptions:

The following activities are exempt from any requirement for a development permit:

1. For certainty, construction occurring outside of the Development Permit Area.
2. The placement of impermanent structures such as benches, tables and garden ornaments.
3. Development on land where a conservation covenant under section 219 of the Land Title Act registered against title is granted to the Local Trust Committee or a recognized conservancy and includes provisions which protect shoreline ecosystems in a manner consistent with the applicable DPA guidelines.
4. Repair, maintenance, alteration or reconstruction of existing legal buildings, structures or utilities, including those that are legal non-conforming.
5. The removal of invasive non-native plants.

6. Farm operations as defined in the *Farm Practices Protection (Right to Farm) Act* and farm uses as defined in Section 2(2), (3), (4) and (5) of the Agricultural Land Reserve Use, Subdivision, and Procedure Regulation.
7. Construction of a fence so long as no native trees are removed and the disturbance of native vegetation is restricted to 0.5 metres on either side of the fence.
8. Gardening and yard maintenance activities within an existing landscaped area, such as lawn mowing, tree and shrub pruning, vegetation planting and minor soil disturbance that do not alter the general contours of the land.
9. The pruning or limbing of trees provided it cannot reasonably be expected to result in the death or removal of the tree.
10. The removal of trees that have been examined by an International Society of Arboriculture (ISA) certified arborist and certified to pose an immediate threat to life or property.
11. The construction of a small accessory building such as a pump house, gazebo, garden shed or play house if all the following apply;
 - The building is located a minimum of 15 metres from the natural boundary of sea
 - No native trees are removed; and
 - The total area of the accessory building is less than 10 m².
12. Emergency actions required to prevent, control or reduce an immediate threat to human life, the natural environment or public or private property including:
 - Forest fire, flood and erosion protection works;
 - Protection, repair or replacement of public facilities;
 - Clearing of an obstruction from a bridge, culvert, dock wharf or stream; or
 - Bridge repairs.

Guidelines:

General Guidelines:

1. In general, development of the shoreline area should be limited and minimize impacts on the ecological health of the immediate area.
2. New upland shoreline structures, additions or land alteration should be located and designed to avoid the need for shore protection works.
3. Sea level rise, storm surges, increased storm intensity and other anticipated effects of climate change should be addressed in all applications.

4. The LTC may consider variances to subdivision or building and structure siting or size regulations to meet the objectives of the development permit area.
5. New development on steep slopes or bluffs shall be set back sufficiently from the top of the bluff to ensure that shore protection measures will not be necessary during the life of the structure, as demonstrated by a geotechnical analysis for the site.
6. Alteration of natural drainage systems that disrupt the natural hydrological cycle shall not be permitted.
7. Soil removal and deposit, as well as areas cleared and disturbed for development should be minimized.
8. Shore protection measures that will cause erosion or other physical damage to adjacent or down-current areas shall not be supported.
9. Shore protection measures should not be allowed for the purpose of providing a sufficient setback to meet zoning requirements.
10. New septic systems should not be located in the development permit area. If such a location cannot be avoided, the encroachment into the development permit area must be minimized, and the design and construction of the septic system be supervised by a qualified professional to ensure that the objectives and guidelines of the development permit area are met as conditions of the permit.
11. Where this development permit area includes native plant species or plant communities dependent on a marine shoreline habitat that are identified locally, provincially, or federally as sensitive, rare, threatened or endangered, or have been identified by a qualified professional as worthy of particular protection, their habitat areas should be left undisturbed. If disturbance cannot be entirely avoided, development and mitigation / compensation measures shall be undertaken only under the supervision of a qualified professional with advice from applicable senior environmental agencies.
12. Shore protection measures should not be allowed for the purpose of providing space for additions to existing structures or new outbuildings.

Guidelines for Specific Shoreline Types:

13. New development on steep slopes or bluffs shall be set back sufficiently from the top of the bank to ensure that the effects of wind shear are minimized.
14. Removal of trees or other vegetation from steep slopes or bluffs should only be allowed where necessary and where replacement vegetation / erosion control measures are established. If possible, stumps should be left in place to provide some soil stabilizing influence until replacement vegetation is

established. Plans delineating extent of vegetation / tree removal (location, species and diameter of trees) and location of proposed construction, excavation and / or blasting, may be required.

Guidelines for Construction Practices:

Erosion Control

15. All development within this development permit area should be undertaken and completed in such a manner as to prevent the release of sediment to the shore or to any watercourse that flows to the marine shore. An erosion and sediment control plan, including actions to be taken prior to land clearing and site preparation and the proposed timing of development activities to reduce the risk of erosion, may be required as part of the development permit application.

Monitoring

16. A development permit may require monitoring of the implementation of required environmental mitigation, restoration or enhancement planting or measures approved under a development permit by a qualified professional until all such measures have been completed and the professional has provided a report confirming completion to a standard acceptable to the Local Trust Committee.

Guidelines for Vegetation Management, Restoration and Enhancement:

17. Existing, native vegetation should be retained wherever possible to minimize disruption to habitat and to protect against erosion and slope failure.
18. Existing trees and shrubs to be retained should be clearly marked prior to development, and temporary fencing installed at the drip line to protect them during clearing, grading and other development activities.
19. If the area has been previously cleared of native vegetation, or is cleared during the process of development, replanting should be required in accordance with these guidelines or requirements specified in the development permit. Areas of undisturbed bedrock exposed to the surface of natural sparsely vegetated areas should not require planting.
20. Vegetation species used in replanting, restoration or enhancement should be selected to suit the soil, light and groundwater conditions of the site, should preferably be native to the area, and be selected for erosion control and/or fish and wildlife habitat values as needed. Suitably adapted, non-invasive, non-native vegetation may also be considered acceptable.
21. All replanting should be maintained by the property owner for a minimum of 3 years from the date of completion of the planting. This may require removal of invasive, non-native weeds (e.g., Himalayan blackberry, Scotch

broom, English ivy) and irrigation. Unhealthy, dying or dead stock should be replaced at the owner's expense within that time in the next regular planting season.

Guidelines for the Construction and Replacement of Boat Launch Facilities:

22. Boat launch ramps are the least desirable of all water access structures and will be considered only if they can be located on stable, non-erosional banks where a minimum amount of substrate disturbance or stabilization is necessary. Ramps should be kept flush with the slope of the foreshore to minimize interruption of natural geo-hydraulic processes.
23. Construction of a private ramp on an individual residential lot or parcel is discouraged. Owners are urged to seek alternatives.

Guidelines for the Installation of Ocean-loop Geoexchange Systems

24. Ocean-loop geoexchange systems will only be considered if they are closed-loop systems using only water as the circulating heat transfer fluid; if they meet or exceed the Canadian CSA design standards CAN/CSA-448-02; and if they are designed and installed by a Registered System Designer.

5.2 TEMPORARY USE PERMITS

An Official Community Plan may designate areas where temporary uses may be allowed. A temporary use permit may, notwithstanding a zoning bylaw, allow a use, permit the construction or use of buildings or structures to accommodate persons who work at the temporary enterprise for which the permit is issued and specify conditions under which a temporary use may be carried on. A permit may be issued for a period of up to three years and may be renewed only once. The issuance of a temporary use permit should be conditional on compliance with the following guidelines:

- 5.2.1 Temporary Use Permits may be issued for any area covered by this plan, except for areas designated Parks, Recreation or Conservation on Schedule "C".
- 5.2.2 Temporary Use Permits should only be issued for activities that are of short and fixed duration.
- 5.2.3 An application for a Temporary Use Permit should only be considered if the proposal can be demonstrated to have minimal negative impact on the environment of the Ballenas-Winchelsea Islands Area.
- 5.2.4 In issuing a Temporary Use Permit, the LTC should specify conditions under which the use may be carried on that would mitigate any impacts of the use, including restoration of land upon completion of the permit.
- 5.2.5 In issuing a Temporary Use Permit, the LTC may consider requiring a security deposit for works required to mitigate any impacts of the use, including restoration of land upon completion of the permit.

5.3 DEVELOPMENT APPROVAL INFORMATION

- 5.3.1 The area subject to this bylaw is designated as an area under which development approval information may be required for the purpose of obtaining consistent and comprehensive information on the impacts of proposed development.
- 5.3.2 Trust Council may consider adoption of a development approval information bylaw pursuant to s. 920.1 of the *Local Government Act*.

6. ADMINISTRATION AND INTERPRETATION

6.1 PURPOSE

The purpose of this official community plan bylaw is to further the object of the Islands Trust Act through long-range land use policy for the Ballenas-Winchelsea Islands. This bylaw provides a statement of local government goals, objectives and policies. It is intended to provide policy guidance for the Executive Committee acting as a Local Trust Committee, government agencies, organizations and the public regarding the existing and proposed land use and development in the Ballenas-Winchelsea Islands Area.

6.2 ISLANDS TRUST AUTHORITY

The *Islands Trust Act* gives the Islands Trust, through its Local Trust Committees, the same land use planning authority as a regional district board under the *Local Government Act*. Bylaws must be approved by the Islands Trust Executive Committee and, in the case of Official Community Plans, also by the Minister of Community, Sport and Cultural Development before adoption by the Local Trust Committee.

The Executive Committee acting as a Local Trust Committee has the responsibility for land use planning and regulations within the Ballenas-Winchelsea Islands Area. This committee has four members who are elected in other Local Trust Areas and who have been elected by Trust Council as chairperson and vice chairpersons of the Islands Trust Council.

The purpose of the Trust Council, Executive Committee, and Local Trust Committees is to carry out the object of the Islands Trust, which is:

To preserve and protect the trust area and its unique amenities and environment for the benefit of the residents of the trust area and of the Province generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of the province.

The legislated object defines the purpose of providing authority to the Islands Trust for land use regulation. Local trust committees employ the available planning powers of the *Local Government Act* to preserve, protect, and effectively maintain the rural nature, health, natural environment and vitality of the Trust Area.

6.3 AREA OF JURISDICTION

The provisions of this Bylaw apply to the Ballenas-Winchelsea Islands Planning Area as shown on Schedule "B", which forms part of this bylaw.

6.4 ADVOCACY POLICIES

Community goals and objectives included in this bylaw that address matters that are outside the jurisdiction of the Executive Committee acting as a Local Trust Committee are considered "advocacy policies". These advocacy policies encourage others to take actions that the local trust committee believes would contribute to the goals and objectives of the plan. This bylaw cannot and does not represent a commitment from other agencies or persons to act according to community goals, objectives or policies.

6.5 PUBLIC FACILITIES

Any designation or policy for proposed public facilities on private lands shall be deemed to be a broad community goal of this bylaw and is not a commitment of the LTC and does not have a regulatory effect on private properties. These facilities may include, but are not limited to, roads, parks, trails, and public and community facilities that are not available for acquisition through dedication, grants, or as an amenity through a zoning regulation, and which are not subject to committed funds either through a capital expenditure plan or other budgeting process of the public agency responsible for the proposed facility.

6.6 IMPLEMENTATION

Section 884 of the *Local Government Act* specifies that:

"An official community plan does not commit or authorize a municipality, regional district (includes a local trust committee pursuant to Section 27 of the *Islands Trust Act*) or improvement district to proceed with any project that is specified in the plan."

and

"All bylaws enacted or works undertaken by a council, board or greater board (includes a local trust committee pursuant to Section 27 of the *Islands Trust Act*), or by the trustees of an improvement district, after the adoption of an official community plan must be consistent with the relevant plan."

6.7 INTERPRETATION

- 6.7.1 In the system used for referencing provisions, the single digit number indicates parts, the two digit number sections, the three digit numbers policies and the lower case letters articles:

Part:	1
Section:	1.1
Policy:	1.1.1
Subsection:	(a)

- 6.7.2 The final interpretation as to the precise location of boundaries on any map schedule shall be defined by:
- (a) Where boundaries coincide with lot lines, the boundaries are the lot lines.
 - (b) Where a boundary is shown as following any highway, right of way or stream, the centre line of such highway, right of way, or stream the centreline of that feature is the boundary
 - (c) Where land based and water based boundaries coincide, the common boundary shall be the surveyed lot line as shown on a plan registered in the Land Title Office, and where there is no such plan the natural boundary is the common boundary.
 - (d) Where a boundary does not follow a legally defined line and no dimensions are shown by which the boundary could otherwise be

located, the location of the boundary must be determined by scaling from the map schedule and in that case the boundary is the midpoint of the line delineating the boundary on the schedule.

6.7.3 In interpreting the objectives and policies of the Plan, the term "shall" or "will" denotes that the indicated measure must be taken or applied. The term "should" or "may" indicates that the suggestion is intended as a guideline.

6.7.4 Throughout this Plan, the words listed below shall be defined as follows:

Conservation – actions, legislation or institutional arrangements that lead to the protection or preservation of a given species, group of species, habitat, natural area, or property or area of human heritage value or character.

Ecosystem – a complete system of living organisms interacting with the soil, land, water, and nutrients that make up their environment. An ecosystem is the home of living things, including humans. An ecosystem can be any size—a log, pond, field, forest, or the earth's biosphere—but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation—for example, old-growth forest or grassland ecosystem.

Environmentally Sensitive Area - places that have special environmental attributes worthy of retention or special care. These areas are critical to the maintenance of productive and diverse plant and wildlife populations. Examples include rare ecosystems, habitats for species at risk and areas that are easily disturbed by human activities. Some of these environmentally sensitive areas are home to species which are nationally or provincially significant, others are important in a more local context. They range in size from small patches to extensive landscape features, and can include rare and common habitats, plants and animals.

Foreshore - the area between the high and low water mark of tidal water.

Local Trust Committee (LTC) - The Executive Committee acting as a Local Trust Committee.

Natural Boundary - means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself;

Official Community Plan (OCP) - A community plan adopted pursuant to Part 26, Division (2), Section 876 of the *Local Government Act*.

Park - Park land acquired through dedication of land at time of subdivision, donation or by purchase through a community parks function of a regional district unless otherwise specified in this Bylaw.

Plan - An Official Community Plan adopted by the Executive Committee acting as a Local Trust Committee.

Precautionary Principle – the recognition that when an activity raises threats of harm to the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

Preserve – to maintain a given condition. Preservation often requires maintaining the processes that generate the desired condition.

Protect – to maintain over the long-term by managing, or if necessary limiting, the type and intensity of development or activity to ensure that valued attributes are not compromised or destroyed.

Sensitive Ecosystem – ecosystems which are fragile and/or rare, or those ecosystems which are ecologically important because of the diversity of species they support.

Stewardship – voluntary, cooperative actions that nurture and take responsibility for the long-term integrity of the environment and amenities of the Trust Area.

Sustainable – capable of meeting the environmental, economic and social needs of current generations without compromising the ability of future generations to meet their needs.

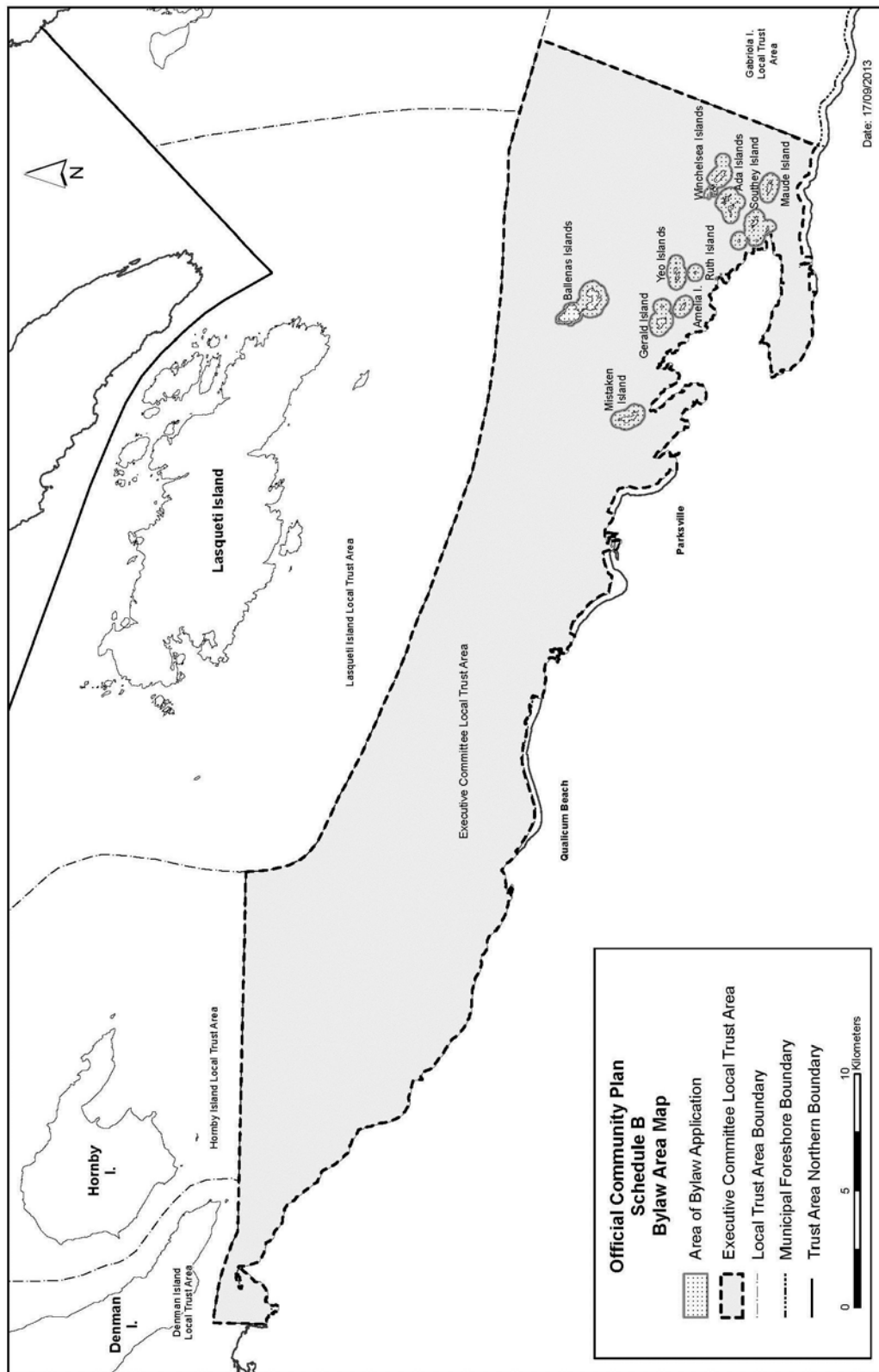
6.8 AMENDMENT PROCEDURE

This Bylaw may be amended by the Executive Committee acting as a Local Trust Committee, at its initiative or in response to an application. Individuals seeking amendment shall submit applications in the form provided for in the bylaws of the Local Trust Committee that address fees and procedures.

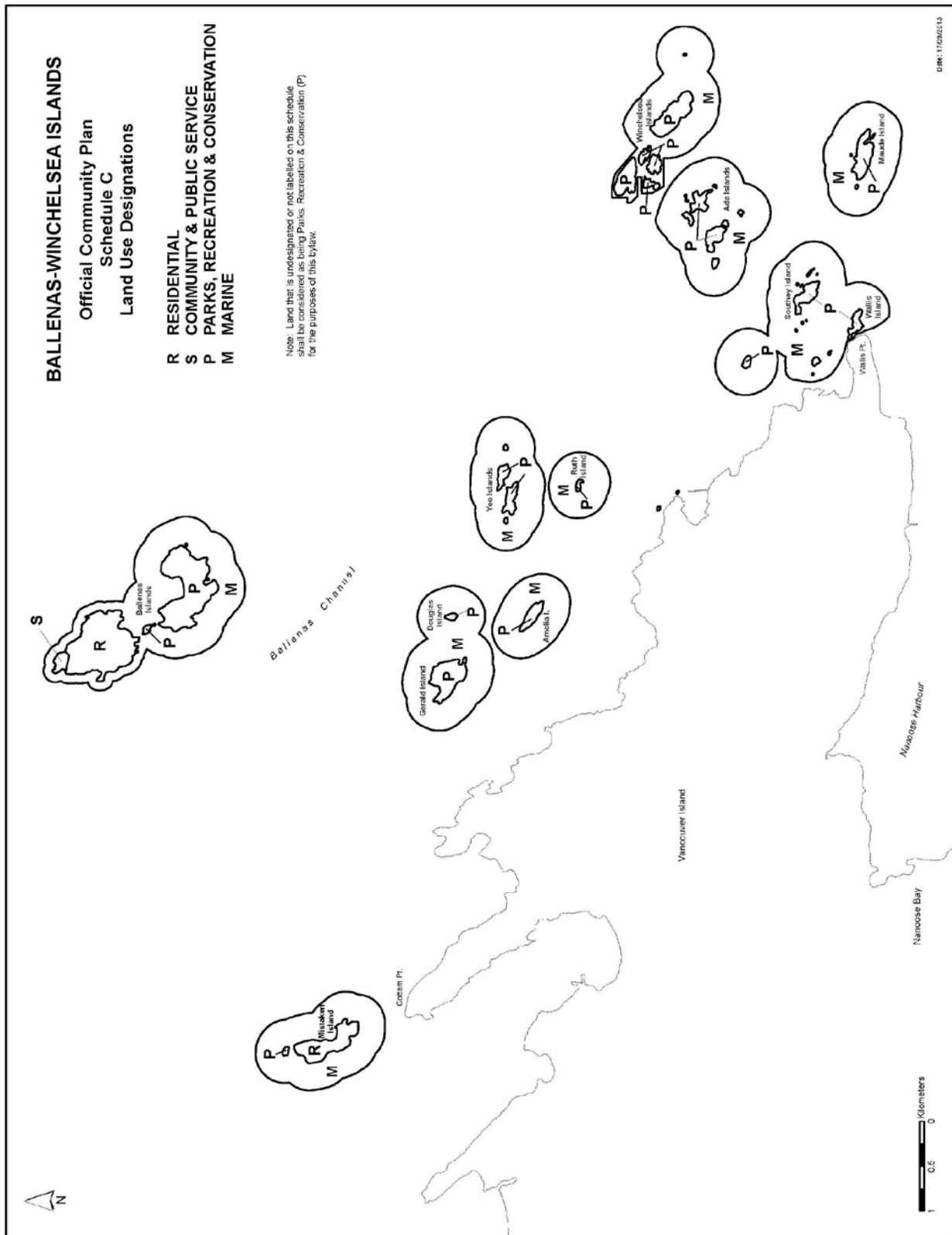
6.9 SEVERABILITY

If any provision of this Bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the invalid provision must be severed from the Bylaw and the decision that such provision is invalid must not affect the validity of the remaining provisions of the Bylaw.

SCHEDULE B – Bylaw Area Map



SCHEDULE C – Land Use Designations





BALLENAS-WINCHELSEA ISLANDS LAND USE BYLAW No. 28, 2013

Consolidation as of: _____, 20__

Back of front cover

Table of Amendments

Bylaw No.	Date of Adoption	Date of Bylaw Consolidation

This page intentionally left blank

PROPOSED

ISLANDS TRUST EXECUTIVE COMMITTEE ACTING AS A LOCAL TRUST COMMITTEE (BALLENAS – WINCHELSEA ISLANDS) BALLENAS-WINCHELSEA ISLANDS LAND USE BYLAW No. 28, 2013

A Bylaw to establish regulations and requirements respecting the use of land, including the surface of water, the use, siting and size of buildings and structures, landscaping and the subdivision of land within the Ballenas-Winchelsea Islands Area.

WHEREAS the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) is the Local Trust Committee having jurisdiction on and in respect of the Ballenas-Winchelsea Islands Area, pursuant to the *Islands Trust Act*;

AND WHEREAS the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) wishes to adopt a Land Use bylaw and other development regulations and to show by map the boundaries of the zones;

AND WHEREAS the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) has held a Public Hearing;

NOW THEREFORE the Islands Trust Executive Committee acting as a Local Trust Committee (**Ballenas – Winchelsea Islands**) enacts in open meeting assembled as follows:

1. Bylaw No. 28 may be cited for all purposes as the “Ballenas-Winchelsea Islands Land Use Bylaw No. 28, 2013.”
2. The following schedules attached hereto are hereby made part of this Bylaw and adopted as the Land Use Bylaw for that part of the Ballenas-Winchelsea Islands Area as shown on Schedule “B”:

SCHEDULE “A” - Land Use Bylaw Regulations

SCHEDULE “B” - Bylaw Area Map

SCHEDULE “C” - Zoning Map

READ A FIRST TIME this	3rd	day of	May	, 2013
READ A SECOND TIME this	16th	day of	January	, 2014
PUBLIC HEARING HELD this		day of		, 201x
READ A THIRD TIME this		day of		, 20
APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST this		day of		, 20
ADOPTED this		day of		, 20

SECRETARY

CHAIRPERSON

TABLE OF CONTENTS

SCHEDULE A - LAND USE BYLAW REGULATIONS	1
PART 1 INTERPRETATION	1
1.1 Definitions	1
1.2 Referencing	6
1.3 Units of Measure	6
1.4 Information Notes	6
PART 2 ADMINISTRATION	7
2.1 Application	7
2.2 Conformity	7
2.3 Inspection	7
2.4 Violation	7
2.5 Penalty	7
2.6 Covenants	8
2.7 Owner's Cost	8
2.8 Enforcement of Siting Regulations	8
PART 3 GENERAL REGULATIONS	9
3.1 Permitted in All Zones	9
3.2 Prohibited in All Zones	10
3.3 Siting and Setback Regulations	10
3.4 Height Regulations	11
3.5 Fences	11
3.6 Accessory Uses, Buildings and Structures	11
3.7 Home Occupations	12
PART 4 ESTABLISHMENT OF ZONES	14

Ballenas-Winchelsea Islands Land Use Bylaw

4.1	Division into Zones	14
4.2	Zone Boundaries	14
PART 5	ZONE REGULATIONS	15
5.1	Residential (R)	15
5.2	Community Service (S)	16
5.3	Conservation (CN)	17
5.4	Park (P)	18
5.5	Nature Protection (NP)	19
5.6	Marine General (W1)	20
5.7	Marine Protection (W2)	22
PART 6	SIGN REGULATIONS	23
6.1	Exempt Signs	23
6.2	Prohibited Signs	23
6.4	Obsolete Signs	23
6.5	Sign Number and Area	23
PART 7	SUBDIVISION REGULATIONS	24
7.1	Exemptions from Minimum Lot Area Requirements	24
7.2	Boundary Adjustment Subdivisions	24
7.3	Section 946 subdivisions (Residence for a Relative)	25
7.4	Highway Standards	25
SCHEDULE B	- Bylaw Area Map	26
SCHEDULE C	- Zoning Map	27

This page intentionally left blank

SCHEDULE A - Land Use Bylaw Regulations

PART 1 INTERPRETATION

1.1 Definitions

"accessory" in relation to a use, building or structure means incidental, secondary and exclusively devoted to a principal use, building or structure expressly permitted by this Bylaw on the same lot or, if the accessory use, building or structure is located on the common property in a bare land strata plan, on a strata lot in that strata plan.

"agriculture" means the use of land for the growing, rearing, harvesting, or production of plants, crops, livestock and other farm animals but does not include aquaculture, intensive livestock operations, fur farming or mushroom farming.

"aquaculture" means the growing and cultivation of aquatic plants or animals for commercial purposes, in any water environment, or in human-made containers of water, and includes the growing and cultivation of shellfish on, in or under the foreshore or in the water column.

"building" means a roofed structure, including a mobile home, used or intended to be used for supporting or sheltering any use or occupancy.

"custodial residential" means the residential use of a dwelling for a full or part-time on site custodian of land and amenities.

"dock" means a structure or set of structures, accessory to the residential or agricultural use of an upland lot, typically consisting of a pier, ramp, and float, constructed on or over the water that is connected to the shore and that is used as a landing or mooring place for private marine transport or for private recreational purposes.

"dwelling, single family" means a building used as a residence by a single household, containing sleeping and living areas and a single set of facilities for food preparation and eating, and includes a mobile home and a park model recreational vehicle.

"ecological reserve" means an area of land or water established as an ecological reserve under the *Ecological Reserves Act*.

"ecotourism" means low impact, nature-based tourism that involves education and interpretation of the natural environment, or that provides direct financial benefits to conservation through the raising of funds for environmental protection, research and education, and that is managed to be ecologically sustainable.

"Ballenas-Winchelsea Islands Area" means that portion of the Islands Trust Area shown on Schedule "B" of this Bylaw.

"fence" means a structure used as a barrier to separate, prevent escape or intrusion or mark a boundary and may include a gate, screen or freestanding wall.

"float" means a floating non-roofed structure that is used as a landing or moorage place for marine transport or for recreational purposes and which is free to rise and fall with sea level change and, for all conditions of tidal change, does not rest on the sea bed.

"floor area" means the sum of the horizontal areas of all storeys in a building, measured to the outer surface of the exterior walls, exclusive of any floor area occupied by a cistern used for the collection of rainwater for domestic use or fire protection, and exclusive of any space where a floor and the ceiling above it are less than 1.5 metres (5 feet) apart.

"height" means the vertical distance between the highest point of a building or structure and the average natural grade, being the average undisturbed elevation of the ground at the perimeter of the building or structure calculated by averaging the elevations at the midpoints of all the exterior walls. In the case of buildings and structures on the surface of water, average natural grade shall be the natural boundary for a building or structure fixed to the bed of the water and the watermark of any floating building or structure. In the case of a fence, height means the vertical distance between the top of the fence and the grade at any point along the fence.

"highway" includes a street, road, lane, bridge, viaduct and any other way open to the use of the public, but does not include a private right-of-way on private property.

"home based guest accommodation" means a home occupation where a maximum of four bedrooms per lot, contained either within the principle residence or in a separate dwelling, are rented to transient paying guests.

"home occupation" means a commercial use that is accessory to a permitted principal residential use on the same lot.

"horticulture" means the use of land for the rearing of plants.

"island" means land surrounded by water, and includes islets and rocks exposed in any tidal conditions.

"Local Trust Committee (LTC)" means the Executive Committee acting as a Local Trust Committee.

"lot" means any parcel, block or other area in which land is held or into which it is subdivided whether under the *Land Title Act* or the *Strata Property Act*.

"lot coverage" means the total area of those portions of a lot that are covered by buildings and structures, divided by the area of the lot, and for this purpose the area of a lot that is covered by a building or structure is measured to the drip line of the roof and the common property of a bare land strata plan is deemed to be a lot for the application of the lot coverage regulations in Part 5 if the common property is used for accessory buildings or structures.

"lot line" means the boundary of a lot as shown on a plan of survey registered with the BC Land Titles Office, and

"front lot line" means the lot line that is common to the lot and an abutting highway or access route in a bare land strata plan, and where there are two or more such lot lines the shortest (other than corner cuts) is deemed the front lot line;

"rear lot line" means the lot line that is opposite the front lot line in the case of a lot having four sides, and where the rear portion of a lot is bounded by intersecting side lot lines the point of intersection is deemed the rear lot line;

"exterior side lot line" means a lot line that is not a front or rear lot line and that is common to the lot and an abutting highway or access route in a bare land strata plan; and

"interior side lot line" means a lot line that is not a front, rear or exterior side lot line.

"marina" means the commercial use of a water area for the temporary moorage or storage of boats, and includes any floats, piers, wharves, breakwaters, ramps and walkways associated with such use.

"mobile home" means a dwelling designed, constructed or manufactured to be moved from one place to another by being towed or carried and meets a minimum CSA-Z240 standard.

"moorage" means the tying or securing of a vessel to a fixed structure or mooring buoy.

"mooring buoy" means a fixed buoy to which a boat is moored and that meets the Private Buoy Regulations of the *Canada Shipping Act*.

"natural boundary" means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself.

"natural watercourse" means a naturally formed depression or similar landscape feature that perennially or periodically contains surface water, including a lake, river, creek, spring, ravine, swamp, salt water marsh, and bog, but does not include a constructed ditch or surface drain.

"Ocean-loop geoexchange" means a renewable geothermal heat exchange system that utilizes the naturally occurring temperature of the ocean for heating and cooling that:

- a. is a closed-loop system using only water as the circulating heat transfer fluid,
- b. meets or exceeds the Canadian CSA design standards CAN/CSA-448-02, as amended from time to time, and
- c. is designed and installed by a Registered System Designer accredited by the Canadian Geoexchange Coalition, or the International Ground Source Heat Pump Association.

Information Note: Installation of marine geoexchange systems are also required to obtain the necessary permits or approvals from provincial and federal agencies.

"park" means a publicly owned lot which is used or intended to be used for conservation or the recreation and enjoyment of the public and which may be developed with recreational facilities.

"personal watercraft" means a vessel typically less than 5 metres (16 feet) in length that is propelled by machinery, commonly a jet pump, and designed to be operated by a person standing, kneeling or sitting on the vessel rather than standing or sitting inside the vessel.

"pier" means a fixed structure constructed over the foreshore and the water and that abuts the shoreline, is generally perpendicular to the shoreline, and is used to provide access to a float or as a landing or moorage place for marine transport or for recreational purposes.

"principal" in relation to a use, building or structure means the main or primary use, building or structure, as the case may be, conducted or constructed on a lot.

"pump/utility house" means an accessory building containing only equipment for pumping and processing of water or sewage, or electrical equipment and communication service equipment.

"recreational uses" means leisure activities, performed either individually or collectively, through forms of play, amusement, or relaxation, and may include structures such as picnic benches, shelters, storage buildings, and washroom facilities.

"residence" means a dwelling unit used for the domicile or home life of a person or persons, or the occasional or seasonal occupancy of a dwelling unit by an owner, or by a tenant under a residential tenancy agreement, who has a permanent domicile elsewhere or by non-paying guests of such an owner; and for certainty, residential use does not include short term vacation rental, bed and breakfast use, the keeping of boarders or lodgers, or any occupancy of a dwelling unit by persons entitled to such an occupancy under a time share plan as defined in the *Real Estate Development Marketing Act* or successor legislation.

"setback" means the horizontal distance that a building or structure must be sited from a specified lot line, building or feature.

"sign" means any device or medium including its supporting structure, visible from the sea, any highway or lot other than the one on which it is located, and which is used to attract attention for advertising, information or identification purposes.

"short-term accommodation" means the use or provision for commercial gain of temporary accommodation for persons or households who maintain a permanent residence elsewhere, for periods of less than 30 days at a time.

"structure" means a construction or portion thereof of any kind that is fixed to, supported by or sunk into land or water, but excludes landscaping, septic tanks and fields, and related appurtenances below ground, concrete and asphalt paving or similar surfacing of the land, and retaining structures less than 1.2 metres (4 feet) in height.

"third party sign" means a sign conveying information not pertaining to the lot on which it is located.

"use" means the purpose or activity for which land or buildings are designed, arranged or intended, or for which land or buildings are occupied or maintained.

"utility" means broadcast transmission, electrical, telecommunications, sewer or water services and facilities established or licensed by a government, or government agency, excluding private radio or television antennae, and includes navigational aids.

"wetland" means land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions supports, vegetation typically adapted for life in saturated soil conditions, including marshes, swamps and bogs.

"zone" means a zone established by Part 5 of this Bylaw.

1.2 Referencing

- (1) In the system used for referencing provisions, the single digit number indicates parts, the two digit number sections, the parenthetical numbers subsections, the lower case letters articles and the roman numerals clauses:

Part:	1
Section:	1.1
Subsection:	1.1(1)
Article:	1.1(1)(a)
Clause	1.1(1)(a)(i)

1.3 Units of Measure

- (1) Metric dimensions are used in this Bylaw. Imperial equivalents, where shown in parentheses, are approximate, are provided for convenience only, and do not form part of this Bylaw.

1.4 Information Notes

- (1) Where a paragraph or sentence in this Bylaw is preceded by the words “Information Note”, the contents of the paragraph or sentence are provided only to assist in understanding of the bylaw and do not form a part of it.

PART 2 ADMINISTRATION

2.1 Application

- (1) This Bylaw shall apply to the Ballenas-Winchelsea Islands, being that part of the Islands Trust Area as shown on Schedule "B". Encompassed in this area of application are the entire land area of all islands, islets, reefs, rocks, the surface and bed of the sea and the water column, and all air space above all such land and water areas.

2.2 Conformity

- (1) No person may use or occupy or permit any land, water, building or structure to be used or occupied, or subdivide any land, except as permitted by this Bylaw.
- (2) No person may construct, reconstruct, place, alter, extend or maintain any building, structure or sign except as permitted by this Bylaw.
- (3) Nothing contained in this Bylaw relieves any person from the responsibility to comply with other legislation applicable to their use of land, buildings or structures.
- (4) Any existing lot that is less than the minimum lot area specified in the applicable zone for the creation of new lots by subdivision may be used for any use permitted in that zone unless otherwise specified in this Bylaw.
- (5) No lot or area may be subdivided, no building, structure or land may be used, and no building or structure may be sited in a manner which renders any existing use, building or structure illegal or non-conforming.

2.3 Inspection

- (1) Pursuant to Section 268 of the *Local Government Act*, the Islands Trust Bylaw Enforcement Officer or any other person designated by the Local Trust Committee to administer this Bylaw is authorized to enter, at any reasonable time upon any property that is subject to regulation under this Bylaw, for the purpose of determining whether the regulations are being observed.

2.4 Violation

- (1) Any person who does any act or thing or permits any act or thing to be done in contravention of the provisions of this Bylaw, or who neglects to do or refrains from doing any act or thing which is required to be done by any of the provisions of this Bylaw is deemed to have committed an offence under this Bylaw.

2.5 Penalty

- (1) Any person who commits an offence against this Bylaw is liable, upon summary conviction, to a fine and penalty, pursuant to the *Offence Act*. Each day during which an offence against this Bylaw is continued is deemed to constitute a new and separate offence.

2.6 Covenants

- (1) Where under this Bylaw an owner of land is required or authorized to grant a covenant restricting subdivision or development, the covenant must be granted to the Local Trust Committee pursuant to Section 219 of the *Land Title Act* in priority to all financial charges and delivered in registerable form satisfactory to the Local Trust Committee prior to the granting of the approval or authorization in respect of which the covenant is required. The covenant must indemnify the Local Trust Committee in respect of any fees or expenses it may incur as a result of a breach of the covenant by the covenanter.

2.7 Owner's Cost

- (1) If any provision of this Bylaw requires a report, study, covenant, plan or similar item to be prepared, unless otherwise stated, the owner shall pay all costs.

2.8 Enforcement of Siting Regulations

- (1) Every applicant for a development permit or a development variance permit must provide a plan signed by a B.C. Land Surveyor showing the location on the lot of all existing and proposed buildings, structures and sewage absorption fields in relation to lot and zone boundaries, watercourses, wells and the sea, and in relation to other buildings on the lot, unless the Local Trust Committee determines that the provision of such a plan is not reasonably necessary to establish whether the proposed buildings, structures or sewage absorption fields comply with the siting requirements of this or any other Bylaw.

PART 3 GENERAL REGULATIONS

3.1 Permitted in All Zones

The following uses, buildings and structures are permitted in any zone, except where specified, and all buildings and structures are subject to siting and size regulations established elsewhere in this bylaw:

- (1) Conservation areas, including ecological reserves and other habitat reserves, and parks, but excluding playgrounds and playing fields.
- (2) Water supply facilities, for an individual lot or as a community service, in any land zone for the purposes of supplying potable water on an individual island, including reservoirs, pipes, treatment facilities, storage facilities and pumping and intake structures, but not including desalination facilities.
- (3) Buried or submerged electricity lines for the distribution of electrical power on private residential zoned property, and buried or above-ground lines in any other land use zone.
- (4) Electrical substations for the purposes of supplying electrical power on an individual island.
- (5) Solar collectors in any land zone for the purposes of supplying electrical power to the island on which the structure is located.
- (6) Wind generators in any land zone for the purposes of supplying electrical power to the island on which the structure is located.
- (7) Fences in any land zone, subject to regulations established in Section 3.5.
- (8) Hiking and bicycle trails.
- (9) Signs, subject to regulations established in Part 6.
- (10) Pump/utility houses.
- (11) Sewage disposal facilities for which all required filings have been made in accordance with the Sewerage System Regulation under the *Public Health Act*.
- (12) Horticulture.
- (13) Buildings or structures used for an office or shelter for construction or maintenance crews, or for storage of materials to be used for the erection, construction or maintenance of any building, structure or public utility installation for which a valid building permit has been obtained, provided that such a temporary structure or building is removed within 30 days of completion of the public utility, building or structure.

Information Notes:

All buildings and structures must comply with the BC Building Code.

Water supply facilities must comply with the following BC Acts and Regulations: Water Act, Groundwater Protection Regulation, Public Health Act, Drinking Water Protection Regulation, and Health Hazard Regulation.

3.2 Prohibited in All Zones

Only the uses, buildings and structures expressly permitted in Section 3.1 and Part 5 of this Bylaw are permitted in the relevant zones. Without limiting the generality of the foregoing and for purposes of clarity, the following uses, buildings and structures are prohibited in all zones:

- (1) Junkyards, auto-wrecking and the storage of derelict vehicles outside of a permitted and enclosed structure.
- (2) The disposal and storage of hazardous or toxic waste.
- (3) The rental, sale and commercial storage of personal watercraft.
- (4) The use of a vessel anchored, moored, or secured as a permanent residence.
- (5) Fin fish aquaculture in any water zone.
- (6) Bridges, causeways and tunnels connecting any one island to another island or the mainland.
- (7) Water utility lines connecting any island to another island or the mainland.
- (8) Marinas.
- (9) Wind generators in any water zone and wind generators intended to provide power to an island other than the island on which the structures are located.
- (10) Dog breeding and boarding kennels.
- (11) Storage of unusable, stripped, non-functional or abandoned vehicles, vessels, trailers or campers.
- (12) Commercial uses except home occupations or short term accommodation where permitted by the regulations in Part 5 of this Bylaw.
- (13) Industrial Uses.

3.3 Siting and Setback Regulations

- (1) All siting measurements must be made on a horizontal plane from the natural boundary, lot line or other feature specified in this Bylaw to the nearest portion of the building or structure in question.
- (2) Buildings or structures, except a fence, utility line, navigational aid, driveway or path, or pump/utility house, shall not be sited within the setback areas established in the regulations in Part 5 of this Bylaw.
- (3) Buildings or structures, including a fence, or a pump/utility house, shall not be sited within 15 metres (50 feet) of the natural boundary of the sea. Septic fields, septic tanks, absorption fields and related appurtenances below ground, concrete and asphalt paving or similar surfacing of the land, and retaining structures are considered structures for the purposes of this subsection. Ocean loop geo-

exchange systems are not considered a structure for the purposes of this subsection.

Information Note: All construction within 30 metres (100 feet) of the natural boundary of the sea requires a Development Permit under the Shoreline Development Permit Area in the Ballenas-Winchelsea Islands Official Community Plan.

- (4) Buildings or structures, except a fence or pump/utility house, shall not be sited within 30 metres (100 feet) of the natural boundary of any natural watercourse or wetland. Septic fields, septic tanks, absorption fields and related appurtenances below ground, concrete and asphalt paving or similar surfacing of the land, and retaining structures are considered structures for the purposes of this subsection.
- (5) Steps, eaves, gutters, cornices, sills, chimneys, balconies, decks and sunshades and similar features attached to buildings, and retaining walls, may project into a required setback area, except a setback from the natural boundary of the sea, a natural watercourse or a wetland, provided they do not project more than 1.0 metre (3 feet) into the required setback area.

3.4 Height Regulations

Except as otherwise provided for in this Part, or Part 5, the following regulations apply:

- (1) No single family dwelling may exceed 9.0 metres (29 feet) in height, except for single family dwellings within 30 meters of the natural boundary of the sea which may not exceed 8.0 metres (26 feet) in height.
- (2) No accessory building or structure may exceed 5.0 metres (16 feet) in height.
- (3) The height regulations for buildings and structures specified in Subsection 3.4(1) and (2) and elsewhere in this Bylaw do not apply to radio, telecommunications and television antennas and towers, light stations, chimneys, flag poles, lightning poles, fire and hose towers, utility poles, attic vents, solar collectors, wind generators and water storage tanks.
- (4) All height measurements to determine compliance with this bylaw shall be taken from the average of the natural grade levels at the midpoints of all walls (or sides) of the building or structure in question, to the highest point of the building or structure.

3.5 Fences

- (1) The height of fences shall not exceed 3 metres (10 feet).

3.6 Accessory Uses, Buildings and Structures

- (1) A building or structure accessory to a dwelling may not be used for human habitation except as permitted by Subsection 3.6(4).

- (2) Accessory buildings are limited to two per lot and the total floor area of all accessory buildings may not exceed 80 square metres (860 square feet).
- (3) One non-residential building may be constructed or placed on a lot prior to the construction of a dwelling or the commencement of a residential use on the same lot.
- (4) An accessory building may be constructed or placed on a lot prior to the construction of a single family dwelling on the same lot and occupied as a temporary dwelling prior to the construction of a permitted single family dwelling on the same lot, subject to:
 - (a) the provision of sewage disposal facilities for which all required filings have been made in accordance with the Sewerage System Regulation under the *Public Health Act* ;
 - (b) the provision of a domestic water supply;
 - (c) compliance with the use, density and siting requirements of this Bylaw for accessory buildings; and
 - (d) cessation of the residential occupancy of the accessory building prior to the occupancy of the principal dwelling on the property and removal from the accessory building of all facilities for food preparation and eating.
- (5) Unless a building or structure, excluding an attached deck and patio, is structurally attached to a principal building by a structure having walls, a roof, and a floor, it is for the purposes of this Bylaw, deemed not to be part of the principal building, but is deemed to be an accessory building or structure.

3.7 Home Occupations

- (1) Permitted accessory home occupations include any home craft, repairing of goods, professional practice, service to a client, creation of a product or home based guest accommodation but do not include short term vacation rental, commercial campgrounds, vessel or aircraft rentals or charters, food service or the retail or wholesale sale of goods or products unless the goods or products are produced, processed or repaired as part of the home business.
- (2) Home occupations must be conducted entirely within a dwelling or a permitted accessory building on a lot where there is a permitted principal residential use.
- (3) The combined floor area used in all home occupations on a lot must not exceed 65 square metres (700 square feet).
- (4) The operator or at least one of the employees of a home occupation must reside on the property.
- (5) Not more than one person per property may be employed in any home occupation in addition to any residents of the premises in which such business is carried on.

- (6) No storage of materials, commodities or finished products is permitted in connection with the operation of a home occupation other than within a permitted building.
- (7) One sign, consistent with the regulations established in Part 6, is permitted in conjunction with all home occupations on each lot.
- (8) No noise resulting from any home occupation may be produced so as to be heard at a lot line or at the natural boundary of the sea.
- (9) A home occupation providing home-based guest accommodation shall have no more than four bedrooms, with a maximum of two beds in each bedroom, which may be rented to transient paying guests.
- (10) Meals may be served to transient paying guests in a home occupation providing home-based guest accommodation.

Information Note: The provisions of meals, other than breakfast as part of a Bed and Breakfast operation, must comply with the British Columbia Food Premises Regulation under the Public Health Act.

PART 4 ESTABLISHMENT OF ZONES

4.1 Division into Zones

- (1) The Ballenas-Winchelsea Islands Area is divided into the following zones, the geographic boundaries of which are as shown on the Zoning Map designated as Schedule "C" that forms part of this Bylaw:

<u>Zone Name</u>	<u>Zone Abbreviation</u>
Residential	R
Community Services	S
Conservation	CN
Park	P
Nature Protection	NP
Marine General	W1
Marine Protection	W2

4.2 Zone Boundaries

- (1) Where zone boundaries on Schedule "C" coincide with lot lines, the zone boundaries are the lot lines.
- (2) Where a zone boundary is shown on Schedule "C" as following any highway, right-of-way or stream, the centre line of such highway, right-of-way, or stream is the zone boundary.
- (3) Where land based and water based zone boundaries shown on Schedule "C" coincide, the common boundary shall be the surveyed lot line as shown on a plan registered in the Land Title Office, and where there is no such plan the natural boundary of the sea is the common boundary.
- (4) Where a zone boundary shown on Schedule "C" does not follow a legally defined line and no dimensions are shown by which the boundary could otherwise be located, the location of the boundary must be determined by scaling from Schedule "C" and in that case the zone boundary is the midpoint of the line delineating the zone boundary.

PART 5 ZONE REGULATIONS

5.1 Residential (R)

Permitted Uses

- (1) The following uses, buildings and structures are permitted, subject to the regulations set out in this section and the general regulations, and all other uses are prohibited:
- (a) Single family dwelling;
 - (b) Agriculture;
 - (c) Home occupations, subject to Section 3.7;
 - (d) Accessory uses, buildings and structures.

Density

- (2) One (1) single family dwelling is permitted per 4.047 hectares (10 acres) of lot area.
- (3) The lot coverage of all buildings, structures and paving shall not exceed 10 percent.

Siting and Size

- (4) The total floor area of a single family dwelling may not exceed 232 square metres (2500 square feet).
- (5) The minimum setback for any building or structure shall be 6 metres (20 feet) from any lot line.
- (6) Despite Subsection 5.1(5), the minimum setback for any building, structure or enclosure housing farm animals shall be 7.6 metres (25 feet) from any lot line.

Subdivision Lot Size Requirements

- (7) No subdivision plan shall be approved in the R zone unless the lots created by the subdivision have a lot area of at least 20.2 hectares (49.9 acres), except where, pursuant to subsection 7.2(1)(b), the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown.

5.2 Community Service (S)

Permitted Uses

- (1) The following uses are permitted, subject to the regulations set out in this section and the general regulations, and all other uses are prohibited:
- (a) Community recreational uses;
 - (b) Light stations.

Density

- (2) The combined lot coverage of all buildings, structures and paving shall not exceed 25 percent.

Siting and Size

- (3) The minimum setback for any building or structure shall be 10 metres (33 feet) from any lot line.

Subdivision

- (4) No subdivision plan shall be approved in the S zone unless the lots created by the subdivision have a lot area of at least 65 hectares (160 acres), except where, pursuant to subsection 7.2(1)(b), the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown.

5.3 Conservation (CN)

Permitted Uses

- (1) The following uses, buildings and structures are permitted and all other uses, buildings and structures are prohibited:
- (a) Ecotourism;
 - (b) Short term accommodation;
 - (c) Custodial residential;
 - (d) Informational signs and interpretive structures.

Density

- (2) One (1) dwelling for ecotourism, short term accommodation, or custodial residential uses is permitted per lot.
- (3) The lot coverage of all buildings, structures and paving shall not exceed 10 percent.

Subdivision

- (4) No subdivision plan shall be approved in the CN zone unless the lots created by the subdivision have a lot area of at least 65 hectares (160 acres), except where, pursuant to subsection 7.2(1)(b), the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown.

5.4 Park (P)

Permitted Uses

- (1) The following uses, buildings and structures are permitted and all other uses, buildings and structures are prohibited:
- (a) Trails, stairs and walkways;
 - (b) Informational signs and interpretive structures;
 - (c) Wilderness camping;
 - (d) Accessory uses, buildings and structures.

Subdivision

- (2) No subdivision plan shall be approved in the P zone unless the lots created by the subdivision have a lot area of at least 65 hectares (160 acres), except where, pursuant to subsection 7.2(1)(b), the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown.

5.5 Nature Protection (NP)

Permitted Uses

- (1) The following uses, buildings and structures are permitted and all other uses, buildings and structures are prohibited:
- (a) Ecological reserves, nature conservancies and parks;
 - (b) Research and educational activities;
 - (c) Trails, stairs and walkways;
 - (d) Wilderness camping;
 - (e) Informational signs and interpretive structures.

Subdivision

- (2) No subdivision plan shall be approved in the NP zone unless the lots created by the subdivision have an average a lot area of at least 65 hectares (160 acres), except where, pursuant to subsection 7.2(1)(b), the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown.

5.6 Marine General (W1)

Permitted Uses

- (1) The following uses and structures are permitted, subject to the regulations set out in this section and the general regulations, and all other uses are prohibited:
- (a) Marine navigational aids;
 - (b) Mooring buoys for the mooring of a private vessel accessory to a residential or agricultural use of an upland lot;
 - (c) Docks, accessory to a residential or agricultural use of an upland lot or lots and providing access for the residents of the upland lot or lots;
 - (d) Barge ramps and marine railways;
 - (e) Ramps, walkways, footings and pilings necessary for the establishment and maintenance of the uses permitted in article 5.6(1)(c) and (d).
 - (f) Ocean-loop geoexchange systems

Density

- (2) Docks permitted by article 5.6(1)(c) shall be limited to one (1) per island.

Siting and Size

- (3) No structure shall be located within 3 metres (10 feet) of the seaward projection of any side lot line of an abutting upland lot.
- (4) All mooring buoys permitted by 5.6(1)(b) shall be located within 100 metres (328 feet) of the upland lot to which they are accessory.
- (5) Ramps, piers and walkways accessing a dock shall not exceed 3 metres (10 feet) in width.
- (6) The maximum area of all floats and piers, excluding ramps and walkways, adjacent to any one island may not exceed 40 square metres (430.6 square feet).
- (7) Storage structures constructed on any part of a dock shall have a maximum height of 1 metre (3 feet) and a maximum total area of 10 square metres (107 square feet).

Conditions of Use

- (8) No building or structure shall be sited, placed or erected on any float, dock, pier or breakwater in the W1 zone except:
- (a) storage structures;
 - (b) railings;
 - (c) lights.

- (9) No dock shall be constructed with foam flotation devices that are not completely encapsulated.
- (10) Barge ramps and marine railways permitted by article 5.6(1)(d) shall be accessory to the residential use of an abutting upland lot, or adjacent upland lots, and shall provide access to that lot or lots for the resident(s) of an upland lot on the island.

5.7 Marine Protection (W2)

Permitted Uses

- (1) The following uses are permitted, subject to the regulations set out in this section and the general regulations, and all other uses are prohibited:
 - (a) Marine navigational aids;
 - (b) Mooring buoys for the mooring of a private vessel accessory to the residential use of an upland lot.

PART 6 SIGN REGULATIONS

6.1 Exempt Signs

The following signs and no others are exempt from the regulations in this part:

- (a) Directional, traffic control, safety, interpretive, address and navigational signs.
- (b) Signs of candidates for public office, who are recognized as candidates by the government in which they seek office, provided they are removed within 14 days of the date of election.
- (c) Signs pertaining to the lease, sale, name of owner or property, or the use or status of a lot or building, provided no sign exceeds a total area of 0.3 square metres (3 square feet).
- (d) Signs erected and maintained by a public agency.
- (e) Interpretive signs associated with permitted uses in Conservation (CN), Nature Protection (NP) and Parks (P) zones.

6.2 Prohibited Signs

- (1) The following signs are prohibited:
 - (a) Any sign that is internally illuminated;
 - (b) Any sign with moving parts;
 - (c) Any sign hung from, or in any way affixed to, any other sign;
 - (d) Any noise-making sign;
 - (e) Third party signs.

6.3 Height

- (1) The maximum height for any sign is 3 metres (10 feet).

6.4 Obsolete Signs

- (1) Any sign which has become obsolete because of the discontinuance of the business, service or activity which it advertises must be removed from the premises within thirty days after the sign becomes obsolete.

6.5 Sign Number and Area

Table 6.1: Sign Number and Area		
Zone/Use	Number of Signs Permitted for each Lot, Premise or Use	Maximum Total Sign Area Permitted for Each Lot, Premise or Use
All zones	1 per lot	0.3 square metres (3 square feet) in area

PART 7 SUBDIVISION REGULATIONS

7.1 Exemptions from Minimum Lot Area Requirements

- (1) The minimum lot sizes specified in Part 5 do not apply if:
 - (a) the lot being created is to be used solely for unattended equipment necessary for the operation of facilities referred to in Section 3.1, a community sewer or water system, electrical and telecommunication utilities, telephone receiving antenna, radio or television broadcasting antenna, a telecommunication relay, an automatic telephone exchange, an air or marine navigational aid, or an electrical substation, and the owner grants to the Local Trust Committee a Section 219 covenant under the *Land Title Act* restricting the use of the lot to one of these uses;
 - (b) the lot being created is for a public park, a conservation area, an ecological reserve or dedication to the Crown;
 - (c) the lot being created results from the consolidation of two or more lots, provided the area of the consolidated lot could not be subdivided into more lots than would be permitted under this bylaw without the consolidation; or
 - (d) to the adjustment of boundaries between lots, provided the area of any lot would not be increased to an extent that it could be subdivided into more lots than would be permitted under this bylaw without the boundary adjustment.
- (2) If the approval of a bare land strata plan would create common property in the same zone as the strata lots, and this bylaw would permit the construction of a dwelling on the common property if it were a lot, the applicant shall grant a Section 219 covenant complying with Section 2.6 in respect of the common property prohibiting the further subdivision of the common property, the construction of any residential dwelling unit on the common property, and the disposition of the common property separately from the strata lots.

7.2 Boundary Adjustment Subdivisions

- (1) A boundary adjustment subdivision that would result in the increase of the area of any lot to the point where the new lots created could be subdivided into more lots than would be permitted under this bylaw without the boundary adjustment is prohibited.
- (2) A boundary adjustment subdivision resulting in an additional lot lying in two or more zones is prohibited.

7.3 Section 946 subdivisions (Residence for a Relative)

- (1) No lot having an area less than 60 hectares (148.3 acres) may be subdivided under Section 946 of the *Local Government Act* to provide a residence for a relative of the owner unless the lot is entirely within the Agricultural Land Reserve.

7.4 Highway Standards

Information Note: For information on road standards see the Letter of Agreement between the Islands Trust and the Ministry of Transportation and Highways, dated October 20, 1992 and amended July 18, 1996, and as may be subsequently amended.

SCHEDULE B - Bylaw Area Map

